

code of federal regulations

Telecommunication

47

PART 80 TO END

Revised as of October 1, 1985

**CONTAINING
A CODIFICATION OF DOCUMENTS
OF GENERAL APPLICABILITY
AND FUTURE EFFECT**

AS OF OCTOBER 1, 1985

With Ancillaries

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controls such as the receiver on/off switch and volume control.

(6) Upper/lower sideband selector switch (for transmitters employing type J3E, H3E or R3E emission).

(7) Carrier level selector control (for transmitters employing type J3E, H3E or R3E emission). This control may be combined with the sideband selector switch.

(8) Channel frequency selector switch.

(9) Transmit/receive selector switch.

(10) Meter(s) and selector switch(es) for monitoring transmitter performance.

(11) Pilot lamp(s) or meter(s) to indicate the presence of radio frequency output power or that transmitter control circuits are activated to transmit.

(b) The FCC may authorize additional controls, connections or devices after considering the functions to be performed by such additions.

§ 95.667 Serial number.

The serial number of each CB transmitter must be engraved on the transmitter's chassis.

§ 95.669 Copy of rules.

A copy of Part 95, Subpart D, of the FCC rules for the Citizens Band Radio Service, current at the time of packing of the transmitter, must be furnished with each CB transmitter marketed.

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APPENDIX 8—EXTRACTS FROM THE INTERNATIONAL TELECOMMUNICATIONS CONVENTION (MALAGA-TORREMOLINOS, 1973), AS REVISED BY THE WORLD ADMINISTRATIVE RADIO CONFERENCE, GENEVA, 1979

AUTHORITY: 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. 151-155, 301-609, unless otherwise noted.

Subpart A—General

SOURCE: 28 FR 14182, Dec. 21, 1963, unless otherwise noted.

§ 97.1 Basis and purpose.

The rules and regulations in this part are designed to provide an amateur radio service having a fundamental purpose as expressed in the following principles:

(a) Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly

with respect to providing emergency communications.

(b) Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art.

(c) Encouragement and improvement of the amateur radio service through rules which provide for advancing skills in both the communication and technical phases of the art.

(d) Expansion of the existing reservoir within the amateur radio service of trained operators, technicians, and electronics experts.

(e) Continuation and extension of the amateur's unique ability to enhance international good will.

§ 97.3 Definitions.

The following definitions are used in this part:

(a) *Amateur radio service.* A radio-communication service of self-training, intercommunication, and technical investigation carried on by amateur radio operators.

(b) *Amateur radiocommunication.* Noncommercial radiocommunication by or among amateur radio stations solely with a personal aim and without pecuniary or business interest.

(c) *Amateur radio operator* means a person holding a valid license to operate an amateur radio station issued by the Federal Communications Commission.

(d) *Amateur radio license.* The instrument of authorization issued by the Federal Communications Commission comprised of a station license, and in the case of the primary station, also incorporating an operator license.

Operator license. The instrument of authorization including the class of operator privileges.

Station license. The instrument of authorization for a radio station in the Amateur Radio Service.

(e) *Amateur radio station.* A station licensed in the amateur radio service embracing necessary apparatus at a particular location used for amateur radiocommunication.

(f) *Primary station.* The principal amateur radio station at a specific land location shown on the station license.

(g) *Military recreation station.* An amateur radio station licensed to the person in charge of a station at a land location provided for the recreational use of amateur radio operators, under military auspices of the Armed Forces of the United States.

(h) *Club station.* A separate Amateur radio station licensed to an Amateur radio operator acting as a station trustee for a *bona fide* amateur radio organization or society. A *bona fide* Amateur radio organization or society shall be composed of at least two persons, one of whom must be a licensed Amateur operator, and shall have:

- (1) A name,
- (2) An instrument of organization (e.g., constitution),
- (3) Management, and
- (4) A primary purpose which is devoted to Amateur radio activities consistent with § 97.1 and constituting the major portion of the club's activities.

(i) *Line A.*

Line A begins at Aberdeen, Washington, running by great circle arc to the intersection of 48° N., 120° W., thence along parallel 48° N., to the intersection of 95° W., thence by great circle arc through the southernmost point of Duluth, Minn., thence by great circle arc to 45° N., 85° W., thence southward along meridian 85° W., to its intersection with parallel 41° N., thence along parallel 41° N., to its intersection with meridian 82° W., thence by great circle arc through the southernmost point of Bangor, Maine, thence by great circle arc through the southernmost point of Searsport, Maine at which point it terminates.

(j) *Terrestrial location.* Any point within the major portion of the earth's atmosphere, including aeronautical, land, and maritime locations.

(k) [Reserved]

(l) *Amateur radio operation.* Amateur radio communication conducted by amateur radio operators from amateur radio stations, including the following:

Fixed operation. Radio communication conducted from the specific geographical land location shown on the station license.

Portable operation. Radio communication conducted from a specific geographical location other than that shown on the station license.

Mobile operation. Radio communication conducted while in motion or during halts at unspecified locations.

Repeater operation. Radio communication, other than auxiliary operation, for retransmitting automatically the radio signals of other amateur radio stations.

Auxiliary operation. Radio communication for remotely controlling other amateur radio stations, for automatically relaying the radio signals of other amateur radio stations in a system of stations, or for intercommunicating with other amateur radio stations in a system of amateur radio stations.

Beacon operation. One-way radio communication conducted in order to facilitate measurement of radio equipment characteristics, adjustment of radio equipment, observation of propagation or transmission phenomena, or other related experimental activities.

Radio control operation. One-way radio communication for remotely controlling objects or apparatus other than amateur radio stations.

(m) *Control* means techniques used for accomplishing the immediate operation of an amateur radio station. Control includes one or more of the following:

(1) *Local control.* Manual control, with the control operator monitoring the operation on duty at the control point located at a station transmitter with the associated operating adjustments directly accessible. (Direct mechanical control, or direct wire control of a transmitter from a control point located on board any aircraft, vessel, or on the same premises on which the transmitter is located, is also considered local control.)

(2) *Remote control.* Manual control, with the control operator monitoring the operation on duty at a control point located elsewhere than at the station transmitter, such that the associated operating adjustments are accessible through a control link.

(3) *Automatic control* means the use of devices and procedures for control so that a control operator does not have to be present at the control point at all times.

(n) *Control link.* Apparatus for effecting remote control between a con-

trol point and a remotely controlled station.

(o) *Control operator.* An amateur radio operator designated by the licensee of an amateur radio station to also be responsible for the emissions from that station.

(p) *Control point.* The operating position of an amateur radio station where the control operator function is performed.

(q) *Antenna structures.* Antenna structures include the radiating system, its supporting structures, and any appurtenances mounted thereon.

(r) *Antenna height above average terrain.* The height of the center of radiation of an antenna above an averaged value of the elevation above sea level for the surrounding terrain.

(s) *Transmitter.* Apparatus for converting electrical energy received from a source into radio-frequency electromagnetic energy capable of being radiated.

(t) *Transmitting power.* The radio frequency (RF) power generated by operations of an amateur radio station, including the following:

(1) *Transmitter power.* The peak envelope power (output) present at the antenna terminals (where the antenna feedline, or if no feedline is used, the antenna, would be connected) of the transmitter. The term "transmitter" includes any external radio frequency power amplifier which may be used. Peak envelope power is defined as the average power during one radio frequency cycle at the crest of the modulation envelope, taken under normal operating conditions.

(2) *Effective radiated power.* The product of the transmitter (peak envelope) power, expressed in watts, delivered to an antenna, and the relative gain of the antenna over that of a half-wave dipole antenna.

(u) *System network diagram.* A diagram showing each station and its relationship to the other stations in a network of stations, and to the control point(s).

(v) *Third-party traffic.* Amateur radiocommunication by or under the supervision of the control operator at an amateur radio station to another amateur radio station on behalf of anyone other than the control operator.

(w) *Emergency communication.* A non-directed request for help or a distress signal directly relating to the immediate safety of human life or the immediate protection of property.

(x) *Automatic retransmission.* Retransmission of signals by an amateur radio station whereby the retransmitting station is actuated solely by the presence of a received signal through electrical or electro-mechanical means, i.e., without any direct, positive action by the control operator.

(y) *External radio frequency power amplifier.* Any device which, (1) when used in conjunction with a radio transmitter as a signal source, is capable of amplification of that signal, and (2) is not an integral part of the transmitter as manufactured.

(z) *External radio frequency power amplifier kit.* Any number of electronic parts, usually provided with a schematic diagram or printed circuit board, which, when assembled in accordance with instructions, results in an external radio frequency power amplifier, even if additional parts of any type are required to complete assembly.

(aa) [Reserved]

(bb) *Business communications.* Any transmission or communication the purpose of which is to facilitate the regular business or commercial affairs of any party.

(cc) *Spread spectrum transmission.* An information bearing transmission in which information is conveyed by a modulated RF carrier and where the bandwidth is significantly widened, by means of a spreading function, over that needed to transmit the information alone.

[37 FR 18543, Sept. 13, 1972, as amended at 37 FR 21998, Oct. 18, 1972; 40 FR 26525, June 24, 1975; 40 FR 53032, Nov. 14, 1975; 41 FR 6261, Feb. 12, 1976; 42 FR 3167, Jan. 17, 1977; 42 FR 57609, Nov. 4, 1977; 43 FR 7323, Feb. 22, 1978; 43 FR 15331, Apr. 12, 1978; 45 FR 51567, Aug. 4, 1980; 47 FR 50704, Nov. 9, 1982; 48 FR 33000, July 20, 1983; 48 FR 34748, Aug. 1, 1983; 49 FR 1376, Jan. 11, 1984; 49 FR 48551, Dec. 13, 1984; 50 FR 23425, June 4, 1985; 50 FR 25246, June 18, 1985; 50 FR 33939, Aug. 22, 1985]

EFFECTIVE DATE NOTE: At 50 FR 23435, June 4, 1985, § 97.3(cc) was added, effective June 1, 1986.

**Subpart B—Amateur Operator and
Station Licenses**

OPERATOR LICENSES

§ 97.5 Classes of operator licenses.

Amateur Extra.
Advanced.
General.
Technician.
Novice.

[49 FR 48551, Dec. 13, 1984]

§ 97.7 Control operator frequency privileges.

(a) The following transmitting frequency bands are available to amateur radio stations having a control operator of the license class designated, subject to the limitations of paragraph (b) of this section:

Control operator license class	Meter band	Terrestrial location of the amateur radio station		Limitations (see paragraph (b)) of this section
		ITU region 1	ITU region 2	
Kilohertz				
Novice	80	3700-3750	3700-3750	3700-3750
			5167.5	
	40	7050-7075	7100-7150	7050-7075
	15	21100-21200	21100-21200	21100-21200
	10	28100-28200	28100-28200	28100-28200
Kilohertz				
Technician	80	3700-3750	3700-3750	3700-3750
			5167.5	
	40	7050-7075	7100-7150	7050-7075
	15	21100-21200	21100-21200	21100-21200
	10	28100-28200	28100-28200	28100-28200
Megahertz				
	6	144-146	50-54	50-54
	2		144-148	144-148
	1.25		220-225	
	0.70		420-450	420-450
	0.35		902-928	
	0.23	1215-1300	1215-1300	1215-1300
		2300-2310	2300-2310	2300-2310
		2390-2450	2390-2450	2390-2450
	0.35		902-928	
				1, 3, 14 and 15
Gigahertz				
			3.300-3.500	3, 8, 10
			5.650-5.925	3, 6, 10
			10.00-10.50	3, 10
			24.00-24.25	3, 7, 10
			46-50	10
			71-76	10
			165-170	10
			240-250	10
		above 300	10	

Control operator license class	Meter band	Terrestrial location of the amateur radio station		Limitations (see paragraph (b)) of this section
		ITU region 1	ITU region 2	
Kilohertz				
General	160		1800-2000	1800-2000
	80	3525-3750	3525-3750	3525-3750
	75		3850-4000	3850-3900
			5167.5	
	40	7025-7100	7025-7150	7025-7100
	40		7225-7300	
	30	10100-10150	10100-10150	10100-10150
	20	14025-14150	14025-14150	14025-14150
	20	14225-14350	14225-14350	14225-14350
	15	21025-21200	21025-21200	21025-21200
15	21300-21450	21300-21450	21300-21450	
12	24890-24990	24890-24990	24890-24990	
10	28000-29700	28000-29700	28000-29700	
Megahertz				
	6		50-54	50-54
	2	144-146	144-148	144-148
	1.25		220-225	
	0.70	430-440	420-450	420-450
	0.35		902-928	
	0.23	1215-1300	1215-1300	1215-1300
		2300-2310	2300-2310	2300-2310
		2390-2450	2390-2450	2390-2450
			902-928	
	0.35			1, 3, 14, and 15
Gigahertz				
			3.300-3.500	3, 6, 10
			5.650-5.925	3, 6, 10
			10.00-10.50	3, 10
			24.00-24.25	3, 7, 10
			48-50	10
			71-76	10
			165-170	10
			240-250	10
			above 300	10

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Kilohertz					
Advanced	160		1800-2000	1800-2000	
	80	3525-3750	3525-3750	3525-3750	
	75	3775-4000	3775-4000	3775-3900	
			5167.5		9
	40	7025-7100	7025-7300	7025-7100	1
	30	10100-10150	10100-10150	10100-10150	11
	20	14025-14150	14025-14150	14025-14150	
	20	14175-14350	14175-14350	14175-14350	
	15	21025-21200	21025-21200	21025-21200	
	15	21225-21450	21225-21450	21225-21450	
	12	24890-24990	24890-24990	24890-24990	12
	10	28000-29700	28000-29700	28000-29700	
Megahertz					
	6		50-54	50-54	
	2	144-146	144-148	144-148	
	1.25		220-225		3
	0.70	430-440	420-450	420-450	3, 4, 13
	0.35		902-928		1, 3, 14
	0.23	1215-1300	1215-1300	1215-1300	3
		2300-2310	2300-2310	2300-2310	3
		2390-2450	2390-2450	2390-2450	3, 5
	0.35		902-928		1, 3, 14, and 15
Gigahertz					
			3.300-3.500		3, 8, 10
			5.650-5.925		3, 6, 10
			10.00-10.50		3, 10
			24.00-24.25		3, 7, 10
			48-50		10
			71-76		10
			165-170		10
			240-250		10
			above 300		10
Kilohertz					
Amateur Extra:	160		1800-2000	1800-2000	
	80/75	3500-3800	3500-4000	3500-3900	
			5167.5		9
	40	7000-7100	7000-7300	7000-7100	1
	30	10100-10150	10100-10150	10100-10150	11

Control operator license class	Meter band	Terrestrial location of the amateur radio station			Limitations (see paragraph (b)) of this section
		ITU region 1	ITU region 2	ITU region 3	
	20	14000-14350	14000-14350	14000-14350	
	15	21000-21450	21000-21450	21000-21450	
	12	24890-24990	24890-24990	24890-24990	12
	10	28000-29700	28000-29700	28000-29700	
Megahertz					
	6	144-146	50-54 144-148	50-54 144-148	
	2		220-225	420-450	3
	1.25		420-450		3, 4, 13
	0.70		902-928		1, 3, 14
	0.35	1215-1300 2300-2310 2390-2450	1215-1300 2300-2310 2390-2450	1215-1300 2300-2310 2390-2450	3
	0.23				3, 5
Gigahertz					
	0.35		902-928		1, 3, 14, and 15
			3.300-3.500		3, 6, 10
			5.650-5.925		3, 6, 10
			10.00-10.50		3, 10
			24.00-24.25		3, 7, 10
			48-50		10
			71-76		10
			165-170		10
			240-250		10
			above 300		10

(b) *Limitations:* (1) Where, in adjacent regions or subregions, a band of frequencies is allocated to different services of the same category, the basic principle is the equality of right to operate. Accordingly, the stations of each service in one region or subregion must operate so as not to cause harmful interference to services in the other regions or subregions (No. 346, the Radio Regulations, Geneva, 1979).

(2) Novice and Technician class radio operators are required to use international Morse code when communicating in this band.

(3) Amateur stations shall not cause interference to the Government radio-location service.

(4) In the following areas, the peak envelope power output of a transmitter used in the Amateur Radio Service shall not exceed 50 watts, except when authorized by the appropriate Commission Engineer-in-Charge and the appropriate Military Area Frequency Coordinator:

(i) Those portions of Texas and New Mexico bounded by latitudes 33°24' N. and 31°53' N., and longitudes 105°40' W. and 106°40' W.

(ii) The State of Florida, including the Key West area and the areas enclosed within circles of 200-mile radius centered at 28°21' N., 80°43' W. and 30°30' N., 86°30' W.

(iii) The State of Arizona.

(iv) Those portions of California and Nevada south of latitude 37°10' N. and the area within a 200-mile radius of 34°09' N., 119°11' W.

(v) In the State of Massachusetts within a 160-kilometer (100 mile) radius of 41°45' N., 70°32' W.

(vi) In the State of California within a 240-kilometer (150 mile) radius of 39°08' N., 121°26' W.

(vii) In the State of Alaska within a 160 kilometer (100 mile) radius of 64°17' N., 149°10' W. (The Military Area Frequency Coordinator for this area is located at Elmendorf Air Force Base, Alaska.)

(viii) In the State of North Dakota within a 160-kilometer (100 mile) radius of 48°43' N., 97°54' W. (The Military Area Frequency Coordinator for this area can be contacted at: HQ SAC/SXOE, Offutt Air Force Base, Nebraska 68113.)

(ix) In the States of Alabama, Florida, Georgia and South Carolina within a 200 kilometer (124 mile) radius of Warner Robins Air Force Base, Georgia (latitude 32°38' N., longitude 83°35' W.).

(x) In the State of Texas within a 200 kilometer (124 mile) radius of Goodfellow Air Force Base, Texas (latitude 31°25' N., longitude 100°24' W.).

(5) No protection in the band 2400-2500 MHz is afforded from interference due to the operation of industrial, scientific and medical devices on 2450 MHz.

(6) No protection in the band 5725-5875 MHz is afforded from interference due to the operation of industrial, scientific and medical devices on 5800 MHz.

(7) No protection in the band 24.00-24.25 GHz is afforded from industrial, scientific and medical devices on 24.125 GHz.

(8) Amateur stations shall not cause interference to the Fixed-Satellite Service operating in the band 3.4-3.5 GHz.

(9) The frequency 5167.5 kHz, maximum power 150 watts, may be used by any station authorized under this part to communicate with any other station authorized in the State of Alaska for emergency communications. All stations operating on this frequency must be located in or within 50 nautical miles of the State of Alaska. The frequency 5167.5 kHz may be used by licensees in the Alaska-private fixed service for calling and listening, but only for establishing communication before switching to another frequency.

(10) In International Telecommunication Union Regions 1 and 3, operations on frequency bands above 2450 MHz may be conducted subject to the limitations and provisions of Section IV of Article 8 of the Radio Regulations of the ITU.

(11) This band is allocated to the fixed service on a primary basis outside the United States and its possessions. Transmissions of stations in the Amateur Radio Service in this band are secondary to foreign fixed service use in this band.

(12) Until July 1, 1989, transmissions of stations in the amateur service shall

not cause harmful interference to operation in the fixed and mobile services outside the United States. Stations in the amateur service are required to make all necessary adjustments (including termination of transmission) if harmful interference is caused.

(13) The band 902-928 MHz is prohibited in those portions of Texas and New Mexico bounded on the south by latitude 31° 41' North, on the east by longitude 104° 11' West, on the north by latitude 34° 30' North, and on the west by longitude 107° 30' West; and in addition, outside this area but within 150 miles of these boundaries of White Sands Missile Range operation is restricted to a maximum transmitter peak envelope power output of 50 watts.

EDITORIAL NOTE: At 50 FR 33940, Aug. 22, 1985, the following paragraph (b)(13) was added to § 97.7 and will be correctly designated by FCC document published in the FEDERAL REGISTER at a later date.

(13) No station shall operate north of Line A (see § 97.3(i)) in the 420-430 MHz band.

(14) In the 902-928 MHz band, amateur radio stations shall not operate within the States of Colorado and Wyoming, bounded by the area of: Latitude 39° to 42° N, and longitude 103° W to 108° W. The band is allocated on a secondary basis to the amateur service subject to not causing harmful interference to the operations of Government stations authorized in this band or to Automatic Vehicle Monitoring (AVM) systems. Stations in the amateur service must tolerate any interference from the operations of industrial, scientific and medical (ISM) devices, AVM systems and the operations of Government stations authorized in this band.

[50 FR 13793, Apr. 8, 1985, as amended at 50 FR 18663, May 2, 1985; 50 FR 33544, Aug. 20, 1985; 50 FR 33939, Aug. 22, 1985; 50 FR 36080, Sept. 5, 1985]

§ 97.9 Eligibility for new operator license.

Anyone except a representative of a foreign government is eligible for an amateur operator license.

[47 FR 29673, July 8, 1982]

§ 97.11 Application for operator license.

(a) An application (FCC Form 610) for a new operator license, including an application for change in operating privileges, which will require an examination shall be submitted in accordance with the provisions of § 97.26.

(b) An application (FCC Form 610) for renewal and/or modification of license when no change in operating privileges is involved shall be submitted to the Commission's office at Gettysburg, Pennsylvania 17325.

(Secs. 4(i) and 303, Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303) [48 FR 45658, Oct. 6, 1983]

§ 97.13 Renewal or modification of operator license.

(a) An amateur operator license, may be renewed upon proper application.

(b) The applicant shall qualify for a new license by examination if the requirements of this section are not fulfilled.

(c) Application for renewal and/or modification of an amateur operator license shall be submitted on FCC Form 610 and shall be accompanied by the applicant's license or a photocopy thereof. Application for renewal of unexpired licenses must be made during the license term and should be filed within 90 days, but not later than 30 days, prior to the end of the license term. In any case in which the licensee has, in accordance with the provisions of this chapter, made timely and sufficient application for renewal of an unexpired license, no license with reference to any activity of a continuing nature shall expire until such application shall have been finally determined.

(d) If a license is allowed to expire, application for renewal may be made during a grace period of two years after the expiration date. During this grace period, an expired license is not valid. A license renewed during the grace period will be dated currently and will not be backdated to the date of its expiration. Application for renewal shall be submitted on FCC Form 610 and shall be accompanied by the applicant's expired license or a photocopy thereof.

(Secs. 4, 303, 48 Stat., as amended, 1066, 1082; 47 U.S.C. 154, 303)

[28 FR 14183, Dec. 21, 1963, as amended at 29 FR 3230, Mar. 11, 1964; 40 FR 59441, Dec. 24, 1975; 43 FR 15325, Apr. 12, 1978; 44 FR 58742, Oct. 11, 1979; 48 FR 26455, June 8, 1983; 48 FR 49862, Oct. 28, 1983]

OPERATOR LICENSE EXAMINATIONS

§ 97.19 When examination is required.

Examination is required for the issuance of a new amateur operator license, and for a change in class of operating privileges. Credit may be given, however, for certain elements of examination as provided in § 97.25.

[28 FR 14183, Dec. 21, 1963]

§ 97.21 Examination elements.

Examinations for amateur operator privileges will comprise one or more of the following examination elements:

(a) *Element 1(A)*. Beginner's code test at five (5) words per minute;

(b) *Element 1(B)*. General code test at thirteen (13) words per minute;

(c) *Element 1(C)*. Expert's code test at twenty (20) words per minute;

(d) *Element 2*. Basic law comprising rules and regulations essential to beginners' operation, including sufficient elementary radio theory for the understanding of those rules;

(e) *Element 3*. General amateur practice and regulations involving radio operation and apparatus and provisions of treaties, statutes, and rules affecting amateur stations and operators;

(f) *Element 4(A)*. Intermediate amateur practice involving intermediate level radio theory and operation as applicable to modern amateur techniques, including, but not limited to, radiotelephony and radiotelegraphy;

(g) *Element 4(B)*. Advanced amateur practice involving advanced radio theory and operation as applicable to modern amateur techniques, including, but not limited to, radiotelephony, radiotelegraphy, and transmissions of energy for measurements and observations applied to propagation, for the radio control of remote objects and for similar experimental purposes.

[32 FR 12685, Sept. 1, 1967]

§ 97.23 Examination requirements.

Applicants for operator licenses will be required to pass the following examination elements:

(a) Amateur Extra Class: Elements 1(C), 2, 3, 4(A) and 4(B);

(b) Advanced Class Elements 1(B), 2, 3, and 4(A);

(c) General Class: Elements 1(B), 2, and 3;

(d) Technician Class: Elements 1(A), 2, and 3;

(e) Novice Class: Elements 1(A) and 2.

[41 FR 25014, June 22, 1976]

§ 97.25 Examination credit.

(a) An applicant for a higher class of amateur operator license who holds any valid amateur license will be required to pass only those elements of the higher class examination that are not included in the examination for the amateur license held.

(b) A certificate of successful completion of an examination will be issued to applicants who successfully complete an examination element. Upon presentation of this certificate for telegraphy examination elements 1(A), 1(B) or 1(C), examiners shall give the applicant for an amateur radio operator license examination credit for the code speed associated with the previously completed element. For purposes of examination credit, this certificate is valid for a period of one year from the date of its issuance.

(c) A person who applies for an amateur operator license will be given credit for any telegraphy element if that person holds a commercial radiotelegraph operator license or permit issued by the Federal Communications Commission, or has held one within 5 years of the Commission's receipt of that person's application for an amateur operator license.

(d) No examination credit, except as herein provided, shall be allowed on the basis of holding or having held any amateur or commercial operator license.

(Secs. 4, 5, 303, 48 Stat., as amended, 1066, 1068, 1082; 47 U.S.C. 154, 155, 303)

[28 FR 14183, Dec. 21, 1963, as amended at 37 FR 19375, Sept. 20, 1972; 41 FR 25014,

June 22, 1976; 42 FR 3166, Jan. 17, 1977; 42 FR 44992, Sept. 8, 1977; 43 FR 25122, June 9, 1978; 44 FR 22466, Apr. 16, 1979; 45 FR 6107, Jan. 25, 1980; 47 FR 49972, Nov. 4, 1982; 48 FR 45658, Oct. 6, 1983]

§ 97.26 Examination procedure.

(a) Each examination for an amateur operator license must be administered at a place and time chosen by the examiner(s). The number of candidates at any examination session may be limited. Public announcement must be made before all examinations for elements 1(B), 1(C), 3, 4(A) or 4(B).

(b) The examiner(s) must be present and observing the candidate throughout the entire examination.

(c) The examiner(s) will be responsible for the proper conduct and necessary supervision during each examination.

(d) Each candidate for an amateur radio license, which requires the applicant to pass one or more examination elements, must present the examiner(s) with a properly completed FCC Form 610 on or before the registration deadline date for those examination sessions for which registration is required; otherwise, applicants shall submit FCC Form 610 at the examination session before the start of the examination(s). In cases where a registration deadline is required, it shall be specified by the VEC that issues the examination papers to the examiner.

(e) The candidate shall comply with the instructions given by the examiner(s). The examiner(s) must immediately terminate the examination upon failure of the candidate to comply with the examiner(s)' instructions.

(f) At the completion of the examination, the candidate shall return all test papers to the examiner(s).

(g) A candidate whose physical disabilities require special procedures to allow participation in examination sessions shall attach a statement to his/her application. For examinations other than Novice Class the statement shall be retained in the files of the VEC that issues the test papers. The statement for Novice Class examinations shall be retained by the examiner for one year. The statement shall include:

(1) A physician's certification indicating the nature of the disability; and

(2) The name(s) of the person(s) taking and transcribing the applicant's dictation of test questions and answers, if such a procedure is necessary.

(Secs. 4(i) and 303, Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303) [48 FR 45659, Oct. 6, 1983, as amended at 50 FR 38818, Sept. 25, 1985]

EFFECTIVE DATE NOTE: At 50 FR 38818, Sept. 25, 1985, § 97.26(a) was revised and (h) was removed, effective November 8, 1985. For the convenience of the user, the superseded text is set forth as follows:

§ 97.26 Examination procedure.

(a) Each examination for an amateur radio operator license shall be administered at a location and a time specified by the examiner(s). Public announcement before examinations shall be made for elements 1(B), 1(C), 3, 4(A) and 4(B).

* * * * *

(h) An applicant who fails an examination element required for an amateur radio operator license shall not apply to be examined for the same or higher examination element within thirty days of the date the examination element was failed.

* * * * *

§ 97.27 Examination preparation.

(a) Element 1(A) shall be prepared by the examiner. The preparer must hold an Amateur Extra, Advanced or General Class operator license. The test shall be such as to prove the applicant's ability to transmit correctly by hand (key, straight key, or, if supplied by the applicant, any other type of hand operated key such as a semi-automatic or electronic key, but not a keyboard keyer) and to receive correctly by ear texts in the international Morse code at a rate of not less than five (5) words per minute during a five-minute test period. Special procedures may be employed in cases of physical disability. (See § 97.26(g).) The applicant is responsible for knowing and may be tested upon the twenty-six letters of the alphabet, the numerals 0-9, the period, the comma, the question mark, AR, SK, BT, and DN. (See § 97.29(c).)

(b) Elements 1(B) and 1(c) shall be prepared by the examiners or be obtained by the examiners from the VEC. The preparer must hold an Amateur Extra Class license. The test shall be such as to prove the applicant's ability to transmit correctly by hand (key, straight key, or, if supplied by the applicant, any other type of hand operated key such as a semi-automatic or electronic key, but not a keyboard keyer) and to receive correctly by ear texts in the international Morse code at not less than the prescribed speed during a five-minute test period. Special procedures may be employed in cases of physical disability. (See § 97.26(g).) The applicant is responsible for knowing and may be tested upon the twenty-six letters of the alphabet, the numerals 0-9, the period, the comma, the question mark, AR, SK, BT and DN. (See § 97.29(c).)

(c) Element 2 shall be designed by the examiner from PR Bulletin 1035A (latest date of issue), entitled *Questions for the Element 2 Amateur Radio Operator License Examination*.

(d) Elements 3, 4(A) and 4(B) will be designed by the VEC. The VEC will select questions for each test from the appropriate list of questions approved by the Commission (either PR Bulletin 1035 B, C or D, latest date of issue). The VEC must select the appropriate number of questions from each category of the syllabus (PR Bulletin 1035) as specified in PR Bulletin 1035 B, C or D. These questions must be taken verbatim from the appropriate PR Bulletin in the form in which they have been approved by the Commission. Beginning January 1, 1987, volunteer examiners may also design Elements 3, 4(A) and 4(B) in accord with the provisions of this paragraph. Each VEC and each volunteer examiner is required to hold current examination designs in confidence.

(e) PR Bulletins 1035 A, B, and C and D will be composed of questions originated by the FCC and questions submitted by amateur radio operators in accordance with the instructions in the Bulletin. Amateur radio operators holding Amateur Extra Class licenses may submit questions for any written examination element. Amateur radio operators holding Advanced Class li-

censes may only submit questions for Element 2 and 3. Amateur radio operators holding General Class or Technician Class licenses may only submit questions for Element 2.

(Secs. 4(i) and 303, Communications Act of 1934, as amended (47 U.S.C. 154(i) and 303), and in § 1.429 of the Commission's Rules (47 CFR 1.429))

[48 FR 45659, Oct. 6, 1983, as amended at 49 FR 30312, July 30, 1984]

§ 97.28 Examination administration.

(a) Unless otherwise prescribed by the Commission, each examination for an amateur radio operator license (except the Novice Class operator license) shall be administered by three accredited (see § 97.515) volunteer examiners. An examiner administering telegraphy examination element 1(A) or written examination element 2 (in conjunction with an examination other than a Novice Class examination) or written examination element 3 must hold an Amateur Extra Class or Advanced Class radio operator license. An examiner administering telegraphy examination element 1(B) or 1(C) or written examination element 4(A) or 4(B) must hold an Amateur Extra Class radio operator license.

(b) Unless otherwise prescribed by the Commission, each examination for the Novice Class operator license shall be administered by one volunteer examiner. The examiner does not have to be accredited. The volunteer examiner must hold a current General, Advanced or Amateur Extra Class operator license issued by the Commission.

(c) Upon completion of an examination element, the examiner(s) shall immediately grade the test papers.

(d) When the candidate does not score a passing grade on an examination element, the examiner(s) shall so inform the candidate by providing the percentage of questions answered correctly, and by returning the application (see § 97.26) to the candidate. For examinations other than Novice Class examinations, the test papers, including answer sheets, shall be returned to the VEC that issued them. For Novice Class examinations, the test papers, including answer sheets, must be retained as part of the volunteer exam-

iner's station records for one year from the date the examination is administered.

(e) When the candidate scores a passing grade on an examination element, the examiners (except for examinations for the Novice Class operator license) must issue a certificate of successful completion of the examination. This certificate may be used for a period of one year for examination credit for telegraphy elements 1(A), 1(B) or 1(C). (See § 97.25(b).)

(f) When the candidate scores a passing grade on all examination elements required for the operator license class sought (see § 97.23), the examiners shall certify to the following information on the candidate's application form (see § 97.26):

(1) Examiners' names, addresses and amateur radio station call signs;

(2) Examiners' qualifications to administer the examination (see § 97.31); and

(3) Examiners' signed statements that the applicant has passed the required examination elements.

(g) Within ten days of the administration of a successful examination for the Novice Class operator license, the examiner shall submit the candidate's application to: Federal Communications Commission, Gettysburg, Pennsylvania 17325.

(h) Within ten days of the administration of a successful examination for the Technician, General, Advanced or Amateur Extra Class operator license, the examiners shall submit the successful candidates' applications and all test papers to the VEC that originally issued that test.

(i) The FCC reserves the right, without qualification, to:

(1) Administer examinations itself; or

(2) Readminister examinations itself or under the supervision of an examiner designated by the FCC to any person who obtained an operator license above the Novice Class through the volunteer examination process.

(j) If a licensee fails to appear for readministration of an examination pursuant to paragraph (i)(2) of this section, or does not successfully complete the examination element(s) which are readministered, the licens-

ee's operator license is subject to cancellation; in an instance of such cancellation, the licensee will be issued an operator license consistent with completed examination elements which have not been invalidated by not appearing for or failing readministration of an examination.

(Secs. 4(i) and 303, Communications Act of 1934, as amended (47 U.S.C. 154(i) and 303), and in § 1.429 of the Commission's Rules (47 CFR 1.429))

[48 FR 45659, Oct. 6, 1983, as amended at 49 FR 1376, Jan. 11, 1984; 49 FR 30312, July 30, 1984; 50 FR 4686, Feb. 1, 1985]

§ 97.29 Examination grading.

(a) Each examination element shall be graded separately by the examiners.

(b) An applicant passes a written examination if he/she answers at least 74 percent of the questions correctly.

(c) An applicant passes a code element examination if he/she proves his/her ability to transmit correctly by hand key (straight key, or, if supplied by the applicant, any other type of hand operated key such as a semi-automatic or electronic key, but not a keyboard keyer) and to receive correctly by ear texts in the international Morse code at not less than the prescribed speed during a five-minute test period. Each five characters shall be counted as one word. Each punctuation mark and numeral shall be counted as two characters.

(Secs. 4(i) and 303, Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303) [48 FR 45660, Oct. 6, 1983, as amended at 49 FR 1376, Jan. 11, 1984]

§ 97.31 Volunteer examiner requirements.

(a) Each volunteer examiner administering an examination for an amateur radio operator license must:

(1) Be at least 18 years of age; and

(2) Not be related to the candidate.

(b) Any person who owns a significant interest in, or is an employee of, any company or other entity which is engaged in the manufacture or distribution of equipment used in connection with amateur radio transmissions, or in the preparation or distribution of any publication used in preparation for obtaining amateur station operator

licenses, is ineligible to be a volunteer examiner for purposes of administering an amateur radio operator examination. However, a person who does not normally communicate with that part of an entity engaged in the manufacture or distribution of such equipment, or in the preparation or distribution of any publication used in preparation for obtaining amateur operator licenses, is eligible to be a volunteer examiner.

(c) Volunteer examiners may not be compensated for services. They may be reimbursed for out-of-pocket expenses, except for Novice class examinations (see § 97.36).

(d) Each volunteer administering an examination for the Technician, General, Advanced or Amateur Extra Class operator license must be accredited by the Volunteer-Examiner Coordinator (see Subpart I).

(e) The FCC will not accept the services of any person seeking to be a volunteer examiner if that person's amateur radio station license or amateur radio station operator's license has ever been revoked or suspended.

(Secs. 4(i) and 303, Communications Act of 1934, as amended (47 U.S.C. 154(i) and 303), and in § 1.429 of the Commission's Rules (47 CFR 1.429))

[48 FR 45660, Oct. 6, 1983, as amended at 49 FR 30312, July 30, 1984; 49 FR 30473, July 31, 1984]

§ 97.33 Volunteer examiner conduct.

No volunteer examiner shall give or certify any examination by fraudulent means or for monetary or other consideration. Violation of this provision may result in the revocation of the amateur radio station license and the suspension of the amateur radio operator license of the volunteer examiner. This does not preclude a volunteer examiner from accepting reimbursement for out-of-pocket expenses under § 97.36. Reimbursement in any amount in excess of that permitted may result in the sanctions specified herein.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended)

[49 FR 30473, July 31, 1984]

§ 97.35 Temporary operating authority.

Unless the FCC otherwise prescribes, an applicant already licensed

in the Amateur Radio Service, upon successfully completing the amateur radio examination(s) required for a higher class, may operate an amateur radio station consistent with the rights and privileges of that higher class for a period of one year from the date of the most recently completed examination for that operator class provided that the applicant retains the certificate(s) for successful completion of the examination(s) (see § 97.28(e)) at the station location, provided that the applicant uses the identifier code of the new class of license for which the applicant has qualified (KT for Technician Class, AG for General Class, AA for Advanced Class and AE for Amateur Extra Class) as a suffix to the present call sign (see § 97.84), and provided that the FCC has not yet acted upon the application for a higher class of license.

(Secs. 4(i) and 303, Communications Act of 1934, as amended (47 U.S.C. 154(i) and 303), and in § 1.429 of the Commission's Rules (47 CFR 1.429))

[49 FR 30313, July 30, 1984]

§ 97.36 Reimbursement for expenses.

(a) Each volunteer examiner coordinator and each volunteer examiner may be reimbursed by examinees for out-of-pocket expenses incurred in preparing, processing or administering examinations for amateur station operator licenses above the Novice class. The volunteer examiner coordinator or the volunteer examiners must collect the reimbursement fee, if any, from the examinees. No reimbursement may be accepted for preparing, processing or administering Novice class examinations.

(b) The maximum amount of reimbursement is \$4.00 for 1984 and will be adjusted annually each January 1 thereafter for changes in the Department of Labor Consumer Price Index. Changes in the maximum amount of reimbursement will be announced by the Commission in a Public Notice. The amount of such reimbursement fee from any examinee for any one examination at a particular session regardless of the number or examination elements taken must not exceed the published maximum.

(c) Each volunteer examiner coordinator and each volunteer examiner who accepts reimbursement must maintain records of out-of-pocket expenses and reimbursements for each examination session. They must certify on or before January 31 of each year to the Commission's office in Gettysburg, PA 17325 that all expenses for the period from January 1 to December 31 of the preceding year for which reimbursement was obtained were necessarily and prudently incurred.

(d) The expense and reimbursement records must be retained by each volunteer examiner coordinator and each volunteer examiner for 3 years and made available to the FCC upon request.

(e) Each volunteer examiner must forward on or before January 15 of each year the certification concerning expenses to the volunteer examiner coordinator who coordinated the efforts of the volunteer examiner and for which reimbursement was received. The volunteer examiner coordinator must forward all such certifications and its own certification concerning expenses to the FCC on or before January 31 of each year.

(f) The volunteer examiner coordinator must disaccredit any volunteer examiner who fails to provide the annual certification. The volunteer examiner coordinator must advise the FCC on January 31 of each year of the volunteer examiners that it has discredited for this reason.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended)

[49 FR 30473, July 31, 1984]

STATION LICENSES

§ 97.37 General eligibility for station license.

(a) An amateur radio station license will be issued only to a licensed amateur radio operator, except that a military recreation station license may also be issued to an individual not licensed as an amateur radio operator (other than a representative of a foreign government), who is in charge of a proposed military recreation station not operated by the U.S. Government

but which is to be located in approved public quarters.

(b) Only modification and/or renewal station licenses will be issued for club and military recreation stations. No new licenses will be issued for these types of stations.

[40 FR 5367, Feb. 5, 1975, as amended at 45 FR 40118, June 13, 1980]

§ 97.39 Eligibility of corporations or organizations to hold station license.

An amateur station license will not be issued to a school, company, corporation, association, or other organization, except that in the case of a *bona fide* amateur radio organization or society meeting the criteria set forth in § 97.3, a station license may be issued to a licensed amateur operator, other than the holder of a Novice Class license, as trustee for such society.

[41 FR 6261, Feb. 12, 1976]

§ 97.40 Station license required.

(a) No transmitting station shall be operated in the amateur radio service without being licensed by the Federal Communications Commission, except that an amateur radio station licensed by the Government of Canada may, in accordance with § 97.41, be operated in the United States without the prior approval of the Commission.

(b) Every amateur radio operator shall have one, but only one, primary amateur radio station license.

[37 FR 18544, Sept. 13, 1972, as amended at 43 FR 7323, Feb. 22, 1978; 43 FR 15331, Apr. 12, 1978; 44 FR 73100, Dec. 17, 1979]

§ 97.41 Operation of Canadian Amateur Stations in the United States.

(a) An amateur radio station licensed by the Government of Canada may be operated in the United States without the prior approval of the Federal Communications Commission.

(b) Operation of a Canadian amateur station in the United States must comply with all of the following:

(1) The terms of the Convention Between the United States and Canada (TIAS No. 2508) Relating to the Operation by Citizens of Either Country of Certain Radio Equipment or Stations

in the Other Country. (See Appendix 4 to Part 97.)

(2) The operating terms and conditions of the amateur station license issued by the Government of Canada.

(3) The provisions of Subparts A through E of Part 97.

(4) Any further conditions the Commission may impose upon the privilege of operating in the United States.

(c) At any time the Commission may, in its discretion, modify, suspend, or cancel the privilege of any Canadian licensee operating an amateur radio station in the United States.

[44 FR 73100, Dec. 17, 1979]

§ 97.42 Application for station license.

(a) Each application for a club or military recreation station license in the Amateur Radio Service shall be made on FCC Form 610-B. Each application for any other amateur radio license shall be made on FCC Form 610.

(b) One application and all papers incorporated therein and made a part thereof shall be submitted for each amateur station license. If the application is only for a station license, it shall be filed directly with the Commission's Gettysburg, Pa. office. If the application also contains an application for any class of amateur operator license, it shall be filed in accordance with the provisions of § 97.11.

(c) Each applicant in the Private Radio Services (1) for modification of a station license involving a site change or a substantial increase in tower height or (2) for a license for a new station must, before commencing construction, supply the environmental information, where required, and must follow the procedure prescribed by Subpart I of Part 1 of this chapter (§§ 1.1301 through 1.1319) unless Commission action authorizing such construction would be a minor action within the meaning of Subpart I of Part 1.

(d) Protection for Federal Communications Commission Monitoring Stations:

(1) Applicants for an amateur radio station license to operate in the vicinity of an FCC monitoring station are advised to give consideration, prior to filing applications, to the possible need to protect the FCC stations from

harmful interference. Geographical coordinates of the facilities which require protection are listed in § 0.121(c) of the Commission's Rules. Applications for stations (except mobile stations) in the vicinity of monitoring stations may be reviewed by Commission staff on a case-by-case basis to determine the potential for harmful interference to the monitoring station. Depending on the theoretical field strength value and existing root-sum-square or other ambient radio field signal levels at the indicated coordinates, a clause protecting the monitoring station may be added to the station license.

(2) Advance consultation with the Commission is suggested prior to filing an initial application for station license if the proposed station will be located within one mile of any of the above-referenced monitoring station coordinates and is to be operated on frequencies below 1000 MHz. Such consultations are also suggested for proposed stations operating above 1000 MHz if they are to be located within one mile of any monitoring station designated in § 0.121(c) as a satellite monitoring facility.

(3) Regardless of any coordination prior to filing initial applications, it is suggested that licensees within one mile of a monitoring station consult the Commission before initiating any changes in the station which would increase the field strength produced over the monitoring station.

(4) Applicants and licensees desiring such consultations should communicate with: Chief, Field Operations Bureau, Federal Communications Commission, Washington, DC 20554, Telephone (202) 632-6980.

(5) The Commission will not screen applications to determine whether advance consultation has taken place. However, applicants are advised that such consultation can avoid objections from the Federal Communications Commission or modification of any authorization which will cause harmful interference.

[44 FR 12681, Mar. 8, 1979. Redesignated at 44 FR 73100, Dec. 17, 1979 and amended at 44 FR 77167, Dec. 31, 1979; 47 FR 29674, July 8, 1982]

§ 97.43 Mailing address furnished by licensee.

Each application shall set forth and each licensee shall furnish the Commission with an address in the United States to be used by the Commission in serving documents or directing correspondence to that licensee. Unless any licensee advises the Commission to the contrary, the address contained in the licensee's most recent application will be used by the Commission for this purpose.

[44 FR 73100, Dec. 17, 1979]

§ 97.44 Location of station.

Every amateur radio station shall have one land location, the address of which appears in the station license, and at least one control point.

[47 FR 29674, July 8, 1982]

§ 97.45 Limitations on antenna structures.

(a) Except as provided in paragraph (b) of this section, an antenna for a station in the Amateur Radio Service which exceeds the following height limitations may not be erected or used unless notice has been filed with both the FAA on FAA Form 7460-1 and with the Commission on FCC Form 854, and prior approval by the Commission has been obtained for:

(1) Any construction or alteration of more than 200 feet in height above ground level at its site (§ 17.7(a) of this chapter).

(2) Any construction or alteration of greater height than an imaginary surface extending outward and upward at one of the following slopes (§ 17.7(b) of this chapter):

(i) 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport with at least one runway more than 3,200 feet in length, excluding heliports and seaplane bases without specified boundaries, if that airport is either listed in the Airport Directory of the current Airman's Information Manual or is operated by a Federal military agency.

(ii) 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport with its longest runway no more than 3,200 feet in length, excluding heli-

ports and seaplane bases without specified boundaries, if that airport is either listed in the Airport Directory or is operated by a Federal military agency.

(iii) 25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each heliport listed in the Airport Directory or operated by a Federal military agency.

(3) When requested by the FAA, any construction or alteration that would be in an instrument approach area (defined in the FAA standards governing instrument approach procedures) and available information indicates it might exceed an obstruction standard of the FAA (§ 17.7(c) of this chapter).

(4) Any construction or alteration on any of the following airports, including heliports (§ 17.7(d) of this chapter).

(i) An airport that is available for public use and is listed in the Airport Directory of the current Airman's Information Manual or in either the Alaska or Pacific Airman's Guide and Chart Supplement.

(ii) An airport under construction, that is the subject of a notice or proposal on file with the Federal Aviation Administration, and except for military airports, it is clearly indicated that the airport will be available for public use.

(iii) An airport that is operated by an armed force of the United States.

(b) A notification to the Federal Aviation Administration is not required for any of the following construction or alteration:

(1) Any object that would be shielded by existing structures of a permanent and substantial character or by natural terrain or topographic features of equal or greater height, and would be located in the congested area of a city, town, or settlement where it is evident beyond all reasonable doubt that the structure so shielded will not adversely affect safety in air navigation. Applicants claiming such exemption shall submit a statement with their application to the Commission explaining the basis in detail for their finding (§ 17.14(a) of this chapter).

(2) Any antenna structure of 20 feet or less in height except one that would

increase the height of another antenna structure (§ 17.14(b) of this chapter).

(c) Further details as to whether an aeronautical study and/or obstruction marking and lighting may be required, and specifications for obstruction marking and lighting when required, may be obtained from Part 17 of this chapter, "Construction, Marking, and Lighting of Antenna Structures." Information regarding the inspection and maintenance of antenna structures requiring obstruction marking and lighting is also contained in Part 17 of this chapter.

[34 FR 18307, Nov. 15, 1969, as amended at 46 FR 10916, Feb. 5, 1981; 48 FR 51917, Nov. 15, 1983]

§ 97.47 Renewal and/or modification of amateur station license.

(a) Application for renewal and/or modification of an individual station license shall be submitted on FCC Form 610, and application for renewal and/or modification of an amateur club or military recreation station shall be submitted on FCC Form 610-B. In every case the application shall be accompanied by the applicant's license or photocopy thereof. Applications for renewal of unexpired licenses must be made during the license term and should be filed not later than 60 days prior to the end of the license term. In any case in which the licensee has, in accordance with the provisions of this chapter, made timely and sufficient application for renewal of an unexpired license, no license with reference to any activity of a continuing nature shall expire until such application shall have been finally determined.

(b) If a license is allowed to expire, application for renewal may be made during a grace period of two years after the expiration date. During this grace period, an expired license is not valid. A license renewal during the grace period will be dated currently and will not be backdated to the date of its expiration. An application for an individual station license shall be submitted on FCC Form 610. An application for an amateur club or military recreation station license shall be submitted on FCC Form 610-B. In every

case the application shall be accompanied by the applicant's expired license or a photocopy thereof.

(Secs. 4, 303, 48 Stat., as amended, 1066, 1082; 47 U.S.C. 154, 303)

[29 FR 3230, Mar. 11, 1964, as amended at 31 FR 6422, Apr. 28, 1966; 34 FR 12219, July 24, 1969; 37 FR 18545, Sept. 13, 1972; 40 FR 54795, Nov. 26, 1975; 44 FR 58742, Oct. 11, 1979; 47 FR 29674, July 8, 1982; 48 FR 49862, Oct. 28, 1983]

§ 97.49 Commission modification of station license.

(a) Whenever the Commission shall determine that the public interest, convenience and necessity would be served, or any treaty ratified by the United States will be more fully complied with, by the modification of any radio station license either for a limited time, or for the duration of the term thereof, it shall issue an order for such licensee to show cause why such license should not be modified.

(b) Such order to show cause shall contain a statement of the grounds and reasons for such proposed modification, and shall specify wherein the said license is required to be modified. It shall require the licensee against whom it is directed to appear at a place and time therein named, in no event to be less than 30 days from the date of receipt of the order, to show cause why the proposed modification should not be made and the order of modification issued.

(c) If the licensee against whom the order to show cause is directed does not appear at the time and place provided in said order, a final order of modification shall issue forthwith.

[28 FR 14185, Dec. 21, 1963, as amended at 48 FR 29874, June 29, 1983]

§ 97.51 Assignment of call signs.

(a) The Commission shall assign the call sign of an amateur radio station on a systematic basis.

(b) The Commission shall not grant any request for a specific call sign.

(c) From time to time the Commission will issue public announcements detailing the policies and procedures governing the systematic assignment of call signs and any changes in those policies and procedures.

[43 FR 7323, Feb. 22, 1978]

§ 97.57 Duplicate license.

Any licensee requesting a duplicate license to replace an original which has been lost, mutilated, or destroyed, shall submit a statement setting forth the facts regarding the manner in which the original license was lost, mutilated, or destroyed. If, subsequent to receipt by the licensee of the duplicate license, the original license is found, either the duplicate or the original license shall be returned immediately to the Commission.

[28 FR 14186, Dec. 21, 1963]

§ 97.59 License term.

(a) Amateur operator licenses are normally valid for a period of ten years from the date of issuance of a new, modified or renewed license.

(b) Amateur station licenses are normally valid for a period of ten years from the date of issuance of a new, modified or renewed license. All amateur station licenses, regardless of when issued, will expire on the same date as the licensee's amateur operator license.

(c) A duplicate license shall bear the same expiration date as the license for which it is a duplicate.

(Secs. 4, 303, 48 Stat., as amended, 1066, 1082; 47 U.S.C. 154, 303)

[44 FR 58743, Oct. 11, 1979, as amended at 48 FR 49862, Oct. 28, 1983]

Subpart C—Technical Standards

§ 97.61 Authorized emissions.

(a) Emissions table:

Frequency band	Emissions	Limitations (see paragraph (b)) of this section
Kilohertz		
1800-2000 kHz	A1A, F1B, A3E, F3E, G3E, A3C, F3C, A3F, F3F	3
3500-4000	A1A	4
3500-3750	F1B	4
3750-4000	A3E, F3E, G3E, A3C, A3F, F3C, F3F	3
5167.5	R3E, J3E	4
7000-7300	A1A	4
7000-7150	F1B	4
7075-7100	A3E, F3E, G3E	1, 3

Frequency band	Emissions	Limitations (see paragraph (b)) of this section
7150-7300	A3E, F3E, G3E, A3C, F3C, A3F, F3F	3
10100-10150	A1A, F1B	.....
14000-14350	A1A	.....
14000-14150	F1B	.....
14150-14350	A3E, F3E, A3C, F3C, A3F, F3F	3
21000-21450	A1A	.....
21000-21200	F1B	4
21200-21450	A3E, F3E, A3C, F3C, A3F, F3F	3
24890-24990	A1A	.....
24890-24930	F1B	.....
24930-24990	A3E, F3E, G3E, A3C, F3C, A3F, F3F	3
28000-29700	A1A	.....
28000-28300	F1B	4
28300-29700	A3E, F3E, G3E, A3C, F3C, A3F, F3F	3
Megahertz		
50.0-54.0	A1A	.....
50.1-54.0	A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F	3
51.0-54.0	NON	.....
144.0-148.0	A1A	.....
144.1-148.0	NON, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F	3
220-225	NON, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F	3
420-450	NON, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F	3
902-928	NON, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, F8E, P0N	.....
1215-1300	NON, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F	3
2300-2310	NON, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, P0N	2, 3
2390-2450	NON, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, P0N	2, 3
Gigahertz		
3.300-3.500	NON, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, P0N	2, 3
5.650-5.925	NON, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, P0N	2, 3
10.000-10.500	NON, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F	3
24.000-24.250	NON, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, G3E, F3C, F3F, P0N	2, 3
48.000-50.000	NON, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, P0N	2, 3

Frequency band	Emissions	Limitations (see paragraph (b)) of this section
71.000-76.000	N0N, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, P0N	2, 3
165.000-170.000	N0N, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, P0N	2, 3
240.000-250.000	N0N, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, P0N	2, 3
Above 300.000	N0N, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, P0N	2, 3

(b) *Limitations:* (1) The use of emissions A3E, F3E, and G3E in this band is limited to amateur radio stations located in Regions 1 and 3, and amateur radio stations located within Region 2 which are west of 130 degrees West longitude.

(2) The emission letters "K, L, M, Q, V, W and X" may also be used in place of the letter "p" for pulsed radars.

(3) J3E, R3E and H3E emissions may also be used.

(4) Novice and Technician class radio operators may not use F1B emissions in this band.

[50 FR 13795, Apr. 8, 1985, as amended at 50 FR 18664, 18665, May 2, 1985; 50 FR 33940, Aug. 22, 1985]

§ 97.63 Selection and use of frequencies.

(a) An amateur station may transmit on any frequency within any authorized amateur frequency band.

(b) Sideband frequencies resulting from keying or modulating a carrier wave shall be confined within the authorized amateur band.

(c) The frequencies available for use by a control operator of an amateur station are dependent on the operator license classification of the control operator and are listed in § 97.7.

[43 FR 15332, Apr. 12, 1978]

§ 97.65 Emission limitations.

(a) Type N0N emission, where not specifically designated in the bands listed in § 97.61 may be used for short periods of time when required for au-

thorized remote control purposes or for experimental purposes. However, these limitations do not apply where type N0N emission is specifically designated.

(b) Whenever code practice, in accordance with § 97.91(d), is conducted in bands authorized for A3E emission, tone modulation of the radiotelephone transmitter may be utilized when interspersed with appropriate voice instructions.

(c) On frequencies below 29.0 MHz, the bandwidth of an F3E or G3E emission (frequency or phase modulation) shall not exceed that of an A3E emission having the same audio characteristics.

(d) On frequencies below 50 MHz, the bandwidth of A3C, A3F, F3C, and F3F emissions shall not exceed that of J3E single sideband emission.

(e) On frequencies between 50 MHz and 225 MHz:

(1) The bandwidth of A3C and A3F single sideband emissions shall not exceed the bandwidth of an J3E single sideband emission.

(2) The bandwidth of A3C and A3F double sideband emissions shall not exceed the bandwidth of an A3E double sideband emission.

(3) F3C and F3F emissions shall utilize a peak carrier deviation no greater than 5 kHz and a maximum modulating frequency no greater than 3 kHz or, alternatively, shall occupy a bandwidth no greater than 20 kHz. (For this purpose, the bandwidth is defined as the width of the frequency band, outside of which the mean power of any emission is attenuated by at least 26 decibels below the mean power level of the total emission. A 3 kHz sampling bandwidth is used by FCC in making this determination.)

(f) Below 225 MHz, an A3C or A3F emission may be used simultaneously with an A3E emission on the same carrier frequency, provided that the total bandwidth does not exceed that of an A3E double sideband emission.

[49 FR 48713, Dec. 14, 1984]

§ 97.67 Maximum authorized transmitting power.

(a) Notwithstanding other limitations of this section, amateur radio

stations shall use the minimum transmitting power necessary to carry out the desired communications.

(b) Each amateur radio transmitter may be operated with a peak envelope power output (transmitter power) not exceeding 1500 watts, except as provided in other limitations of these rules.

(c) Within the limitations of paragraphs (a) and (b) of this section, the effective radiated power of an amateur radio station in repeater operation shall not exceed the power specified for the antenna heights above average terrain given in the following table:

Antenna height above average terrain in meters	Maximum effective radiated power for frequency bands above—		
	29.5 MHz	40 MHz	902 MHz
Below 32 (105 feet).	800 watts.....	Paragraphs (a) and (b) of this section.	Paragraphs (a) and (b) of this section.
32 to 160 (105 to 525 feet).	400 watts.....	800 watts.....	Do.
160 to 320 (525 to 1,050 feet).	200 watts.....	800 watts.....	Do.
Above 320 (1,050 feet).	100 watts.....	400 watts.....	Do.

(d) The peak envelope power output (transmitter power) of each amateur radio transmitter shall not exceed 200 watts when transmitting in any of the following frequency bands:

- (1) 3700-3750 kHz;
- (2) 7050-7075 kHz when the terrestrial location of the station is within Regions 1 or 3;
- (3) 7100-7150 kHz;
- (4) 10100-10150 kHz;
- (5) 21100-21200 kHz; or
- (6) 28100-28200 kHz.

(e) Within the limitations of paragraph (a) of this section, the peak envelope power output of an amateur radio station in beacon operation shall not exceed 100 watts.

(f) An amateur radio station may transmit A3 emissions on or before June 1, 1990 with a transmitter power exceeding that authorized by paragraph (b) of this section, provided that the power input (both radio frequency and direct current) to the final amplifying stage supplying radio frequency power to the antenna feedline does not exceed 1000 watts, exclusive of power for heating the cathodes of vacuum tubes. Limitations of para-

graphs (a), (c) and (d) of this section and limitations of § 97.61 still apply.

(Sec. 1.429 of the Commission's rules (47 CFR 1.429) and secs. 4(i) and 303(r) of the Communications Act of 1934, as amended (47 U.S.C 154(i) and 303(r)))

[28 FR 14186, Dec. 21, 1963, as amended at 47 FR 28105, June 29, 1982; 48 FR 29874, June 29, 1983; 48 FR 34748, Aug. 1, 1983; 48 FR 37224, Aug. 17, 1983; 49 FR 36109, Sept. 14, 1984; 50 FR 18664, May 2, 1985; 50 FR 33940, Aug. 22, 1985]

§ 97.69 Digital communications.

Subject to the special conditions contained in paragraphs (a), (b) and (c) of this section, an amateur radio communication may include digital codes which represent alphanumeric characters, analogue measurements or other information. These digital codes may be used for such communications as (but not limited to) radio teleprinter, voice, facsimile, television, communications to control amateur radio stations, models and other objects, transference of computer programs or direct computer-to-computer communications, and communications in various types of data networks (including so-called "packet switching" systems); provided that such digital codes are not intended to obscure the meaning of, but are only to facilitate, the communications, and further provided that such operation is carried out in accordance with other regulations set forth in this part. (For purposes of this section, the sending speed (signaling rate), in baud, is defined as the reciprocal of the shortest (signaling) time interval (in seconds) that occurs during a transmission, where each time interval is the period between changes of transmitter state (including changes in emission amplitude, frequency, phase, or combination of these, as authorized).)

(a) The use of the digital codes specified in paragraph (b) of this section is permitted on any amateur frequency where F1B emission is permitted, subject to the following requirements:

(1) The sending speed shall not exceed the following:

(i) 300 baud on frequencies below 28 MHz;

(ii) 1200 baud on frequencies between 28 and 50 MHz;

(iii) 19.6 kilobaud on frequencies between 50 and 220 MHz;

(iv) 56 kilobaud on frequencies above 220 MHz.

(2) When type A2B, F1B, F2B emissions are used on frequencies below 50 MHz, the radio or audio frequency shift (the difference between the frequency for the "mark" signal and that for the "space" signal), as appropriate, shall not exceed 1000 Hz. When these emissions are used on frequencies above 50 MHz, the frequency shift, in hertz, shall not exceed the sending speed, in baud, of the transmission, or 1000 Hz, whichever is greater.

(b) Except as provided for in paragraph (c) of this section, only the following digital codes, as specified, may be used:

(1) The International Telegraph Alphabet Number 2 (commonly known as Baudot); provided that transmission shall consist of a single channel, five unit (start-stop) teleprinter code conforming to the International Telegraph Alphabet Number 2 with respect to all letters and numerals (including the slant sign or fraction bar); however, in the "figures" positions not utilized for numerals, special signals may be employed for the remote control of receiving printers, or for other purposes indicated in this section.

(2) The American Standard Code for Information Interchange (commonly known as ASCII); provided that the code shall conform to the American Standard Code for Information Interchange as defined in American National Standards Institute (ANSI) Standard X3.4-1968.

(3) The International Radio Consultative Committee (CCIR) Recommendations 476-2 and 476-3 (commonly known as AMTOR); provided that the code, baud rate and emission timing shall conform to the specifications of CCIR 476-2 (1978) or CCIR 476-3 (1982), Mode A or Mode B.

(c) In addition to the above provisions, the use of any digital code is permitted on amateur frequencies above 50 MHz, except those on which only A1 emission is permitted, subject to the following requirements:

(1) Communications using such digital codes are authorized for domestic operation only (communications be-

tween points within areas where radio services are regulated by the U.S. Federal Communications Commission), except when special arrangements have been made between the United States and the administration of any other country concerned.

(2) The bandwidth of an emission from a station using such digital codes shall not exceed the following (where for this purpose the bandwidth is defined as the width of the frequency band, outside of which the mean power of any emission is attenuated by at least 26 decibels below the mean power of the total emission; a 3 kHz sampling bandwidth being used by the FCC in making this determination):

(i) 20 kHz on frequencies between 50 and 220 MHz;

(ii) 100 kHz on frequencies between 220 and 902 MHz.

(iii) On frequencies above 902 MHz any bandwidth may be used provided that the emission is in accordance with §§ 97.63(b) and 97.73(c).

(3) [Reserved]

(4) When deemed necessary by an Engineer-in-Charge of a Commission field facility to assure compliance with the rules of this part, a station licensee shall:

(i) Cease the transmission of digital codes authorized under this paragraph.

(ii) Restrict the transmission of digital codes authorized under this paragraph to the extent instructed.

(iii) Maintain a record, convertible to the original information (voice, text, image, etc.), of all coded communications transmitted under authority of this paragraph.

[47 FR 42753, Sept. 29, 1982, as amended at 48 FR 7458, Feb. 22, 1983; 48 FR 26456, June 8, 1983; 49 FR 48712, Dec. 14, 1984; 50 FR 13795, Apr. 8, 1985; 50 FR 33940, Aug. 22, 1985]

§ 97.71 Spread spectrum communications.

(a) Subject to special conditions in paragraphs (b) through (i) of this section, amateur stations may employ spread spectrum transmissions to convey information containing voice, teleprinter, facsimile, television, signals for remote control of objects, computer programs, data, and other

communications including communication protocol elements. Spread spectrum transmissions must not be used for the purpose of obscuring the meaning of, but only to facilitate communication.

(b) Spread spectrum transmissions are authorized on amateur frequencies above 420 MHz.

(c) Stations employing spread spectrum transmissions shall not cause harmful interference to stations of good engineering design employing other authorized emissions specified in the table. Stations employing spread spectrum must also accept all interference caused by stations of good engineering design employing other authorized emissions specified in the table. (For the purposes of this subparagraph, unintended triggering of carrier operated repeaters is not considered to be harmful interference. Nevertheless, spread spectrum users should take reasonable steps to avoid this situation from occurring.)

(d) Spread spectrum transmissions are authorized for domestic radio communication only (communication between points within areas where radio services are regulated by the U.S. Federal Communications Commission), except where special arrangements have been made between the United States and the administration of any other country concerned.

(e) Only frequency hopping and direct sequence transmissions are authorized. Hybrid spread spectrum transmissions (transmissions involving both spreading techniques) are prohibited.

(1) *Frequency hopping.* The carrier is modulated with unciphered information and changes at fixed intervals under the direction of a high speed code sequence.

(2) *Direct sequence.* The information is modulo-2 added to a high speed code sequence. The combined information and code are then used to modulate a RF carrier. The high speed code sequence dominates the modulation function, and is the direct cause of the wide spreading of the transmitted signal.

(f) The only spreading sequences which are authorized must be from the output of one binary linear feed-

back shift register (which may be implemented in hardware or software).

(1) Only the following sets of connections may be used:

Number of stages in shift register	Taps used in feedback
7.....	[7,1]
13.....	[13,4,3,1]
19.....	[19,5,2,1]

(The numbers in brackets indicate which binary stages are combined with modulo-2 addition to form the input to the shift register in stage 1. The output is taken from the highest numbered stage.)

(2) The shift register must not be reset other than by its feedback during an individual transmission. The shift register output sequence must be used without alteration.

(3) The output of the last stage of the binary linear feedback shift register must be used as follows:

(i) For frequency hopping transmissions using x frequencies, n consecutive bits from the shift register must be used to select the next frequency from a list of frequencies sorted in ascending order. Each consecutive frequency must be selected by a consecutive block of n bits. (Where n is the smallest integer greater than $\log_2 x$.)

(ii) For a direct sequence transmissions using m -ary modulation, consecutive blocks of $\log_2 m$ bits from the shift register must be used to select the transmitted signal during each interval.

(g) The station records shall document all spread spectrum transmissions and shall be retained for a period of one year following the last entry. The station records must include sufficient information to enable the Commission, using the information contained therein, to demodulate all transmissions. The station records must contain at least the following.

(1) A technical description of the transmitted signal.

(2) Pertinent parameters describing the transmitted signal including the frequency or frequencies of operation and, where applicable, the chip rate, the code, the code rate, the spreading function, the transmission protocol(s) including the method of achieving synchronization, and the modulation type;

(3) A general description of the type of information being conveyed, for example, voice, text, memory dump, facsimile, television, etc.;

(4) The method and, if applicable, the frequency or frequencies used for station identification.

(5) The date of beginning and the date of ending use of each type of transmitted signal.

(h) When deemed necessary by an Engineer-in-Charge of a Commission field facility to assure compliance with the rules of this part, a station licensee shall:

(1) Cease spread spectrum transmissions authorized under this paragraph;

(2) Restrict spread spectrum transmissions authorized under this paragraph to the extent instructed;

(3) Maintain a record, convertible to the original information (voice, text, image, etc.) of all spread spectrum communications transmitted under the authority of this paragraph.

(i) The peak envelope power at the transmitter output shall not exceed 100 watts.

[50 FR 23425, June 4, 1985]

EFFECTIVE DATE NOTE: At 50 FR 23425, June 4, 1985, § 97.71 was added, effective June 1, 1986.

§ 97.73 Purity of emissions.

(a) Except for a transmitter or transceiver built before April 15, 1977 or first marketed before January 1, 1978, the mean power of any spurious emission or radiation from an amateur transmitter, transceiver, or external radio frequency power amplifier being operated with a carrier frequency below 30 MHz shall be at least 40 decibels below the mean power of the fundamental without exceeding the power of 50 milliwatts. For equipment of mean power less than five watts, the attenuation shall be at least 30 decibels.

(b) Except for a transmitter or transceiver built before April 15, 1977 or first marketed before January 1, 1978, the mean power of any spurious emission or radiation from an amateur transmitter, transceiver, or external radio frequency power amplifier being operated with a carrier frequency above 30 MHz but below 235 MHz shall be at least 60 decibels below the

mean power of the fundamental. For a transmitter having a mean power of 25 watts or less, the mean power of any spurious radiation supplied to the antenna transmission line shall be at least 40 decibels below the mean power of the fundamental without exceeding the power of 25 microwatts, but need not be reduced below the power of 10 microwatts.

(c) Paragraphs (a) and (b) of this section notwithstanding, all spurious emissions or radiation from an amateur transmitter, transceiver, or external radio frequency power amplifier shall be reduced or eliminated in accordance with good engineering practice.

(d) If any spurious radiation, including chassis or power line radiation, causes harmful interference to the reception of another radio station, the licensee may be required to take steps to eliminate the interference in accordance with good engineering practice.

NOTE: For the purposes of this section, a spurious emission or radiation means any emission or radiation from a transmitter, transceiver, or external radio frequency power amplifier which is outside of the authorized Amateur Radio Service frequency band being used.

[42 FR 34519, July 6, 1977, as amended at 47 FR 29675, July 8, 1982]

§ 97.75 Use of external radio frequency (RF) power amplifiers.

(a) Any external radio frequency (RF) power amplifier used or attached at any amateur radio station shall be type accepted in accordance with Subpart J of Part 2 of the FCC's Rules for operation in the Amateur Radio Service, unless one or more of the following conditions are met:

(1) The amplifier is not capable of operation on any frequency or frequencies below 144 MHz (the amplifier shall be considered incapable of operation below 144 MHz if the mean output power decreases, as frequency decreases from 144 MHz, to a point where 0 decibels or less gain is exhibited at 120 MHz and below and the amplifier is not capable of being easily modified to provide amplification below 120 MHz);

(2) The amplifier was originally purchased before April 28, 1978;

(3) The amplifier was—

(i) Constructed by the licensee, not from an external RF power amplifier kit, for use at his amateur radio station;

(ii) Purchased by the licensee as an external RF power amplifier kit before April 28, 1978, for use at his amateur radio station; or

(iii) Modified by the licensee for use at his amateur radio station in accordance with § 2.1001 of the FCC's Rules;

(4) The amplifier was purchased by the licensee from another amateur radio operator who—

(i) Constructed the amplifier, but not from an external RF power amplifier kit;

(ii) Purchased the amplifier as an external RF power amplifier kit before April 28, 1978, for use at his amateur radio station; or

(iii) Modified the amplifier for use at his amateur radio station in accordance with § 2.1001 of the FCC's Rules;

(5) The external RF power amplifier was purchased from a dealer who obtained it from an amateur radio operator who:

(i) Constructed the amplifier, but not from an external RF power amplifier kit;

(ii) Purchased the amplifier as an external RF power amplifier kit before April 28, 1978, for use at his amateur radio station; or

(iii) Modified the amplifier for use at his amateur radio station in accordance with § 2.1001 of the FCC's Rules; or

(6) The amplifier was originally purchased after April 27, 1978, and has been issued a marketing waiver by the FCC.

(b) A list of type accepted equipment may be inspected at FCC headquarters in Washington, D.C., or at any FCC field office. Any external RF power amplifier appearing on this list as type accepted for use in the Amateur Radio Service may be used in the Amateur Radio Service.

NOTE: No more than one unit of one model of an external RF power amplifier shall be constructed or modified during any calendar year by an amateur radio operator for use

in the Amateur Radio Service without a grant of type acceptance.

[43 FR 12688, Mar. 27, 1978, as amended at 43 FR 33725, Aug. 1, 1978; 46 FR 18982, Mar. 27, 1981; 47 FR 29675, July 8, 1982]

§ 97.76 Requirements for type acceptance of external radio frequency (RF) power amplifiers and external radio frequency power amplifier kits.

(a) Any external radio frequency (RF) power amplifier or external RF power amplifier kit marketed (as defined in § 2.815 of this chapter), manufactured, imported or modified for use in the Amateur Radio Service shall be type accepted for use in the Amateur Radio Service in accordance with Subpart J of Part 2 of the FCC's Rules. This requirement does not apply if one or more of the following conditions are met:

(1) The amplifier is not capable of operation on any frequency or frequencies below 144 MHz. For the purposes of this part, an amplifier will be deemed to be incapable of operation below 144 MHz if the amplifier is not capable of being easily modified to increase its amplification characteristics below 120 MHz, and either:

(i) The mean output power of the amplifier decreases, as frequency decreases from 144 MHz, to a point where 0 decibels or less gain is exhibited at 120 MHz and below 120 MHz; or

(ii) The amplifier is not capable of even short periods of operation below 120 MHz without sustaining permanent damage to its amplification circuitry;

(2) The amplifier was originally purchased before April 28, 1978, by an amateur radio operator for use at his amateur radio station;

(3) The amplifier was constructed or modified by an amateur radio operator for use at his amateur radio station in accordance with § 2.1001 of the FCC's Rules;

(4) The amplifier was constructed or modified by an amateur radio operator in accordance with § 2.1001 of the FCC's Rules and sold to another amateur radio operator or to a dealer;

(5) The amplifier is purchased in used condition by an equipment dealer from a licensed amateur radio operator who constructed or modified the

equipment in accordance with § 2.1001 of the FCC's Rules and the amplifier is further sold to another amateur radio operator for use at his/her licensed amateur radio station;

(6) The amplifier was manufactured before April 28, 1978, and has been issued a marketing waiver by the FCC.

(b) No more than one unit of one model of an external RF power amplifier shall be constructed or modified during any calendar year by an amateur radio operator for use in the Amateur Radio Service without a grant of type acceptance.

(c) A list of type accepted equipment may be inspected at FCC headquarters in Washington, D.C., or at any FCC field office. Any external RF power amplifier appearing on this list as type accepted for use in the Amateur Radio Service may be marketed for use in the Amateur Radio Service.

[43 FR 12688, Mar. 27, 1978, as amended at 46 FR 18982, Mar. 27, 1981; 47 FR 29675, July 8, 1982; 48 FR 29874, June 29, 1983]

§ 97.77 Standards for type acceptance of external radio frequency (RF) power amplifiers and external radio frequency power amplifier kits.

(a) An external radio frequency (RF) power amplifier or external RF power amplifier kit will receive a grant of type acceptance under this part only if a grant of type acceptance would serve the public interest, convenience, or necessity.

(b) To receive a grant of type acceptance under this part, an external RF power amplifier shall meet the emission limitations of § 97.73 when the amplifier is:

(1) Operated at its full output power;

(2) Placed in the "standby" or "off" positions, but still connected to the transmitter; and

(3) Driven with at least 50 watts mean radio frequency input power (unless a higher drive level is specified).

(c) To receive a grant of type acceptance under this part, an external RF power amplifier shall not be capable of operation on any frequency or frequencies between 24.00 MHz and 35.00 MHz. The amplifier will be deemed in-

capable of operation between 24.00 MHz and 35.00 MHz if:

(1) The amplifier has no more than 6 decibels of gain between 24.00 MHz and 26.00 MHz and between 28.00 MHz and 35.00 MHz. (This gain is determined by the ratio of the input RF driving signal (mean power measurement) to the mean RF output power of the amplifier); and

(2) The amplifier exhibits no amplification (0 decibels of gain) between 26.00 MHz and 28.00 MHz.

(d) Type acceptance of external radio frequency power amplifiers or amplifier kits may be denied when denial serves the public interest, convenience, or necessity by preventing the use of these amplifiers in services other than the Amateur Radio Service. Other uses of these amplifiers, such as in the Citizens Band Radio Service, is prohibited (§ 95.509). Examples of features which may result in dismissal or denial of an application for type acceptance of an external RF power amplifier include, but are not limited to, the following:

(1) Any accessible wiring which, when altered, would permit operation of the amplifier in a manner contrary to the FCC's Rules;

(2) Circuit boards or similar circuitry to facilitate the addition of components to change the amplifier's operating characteristics in a manner contrary to the FCC's Rules;

(3) Instructions for operation or modification of the amplifier in a manner contrary to the FCC's Rules;

(4) Any internal or external controls or adjustments to facilitate operation of the amplifier in a manner contrary to the FCC's Rules;

(5) Any internal radio frequency sensing circuitry or any external switch, the purpose of which is to place the amplifier in the transmit mode;

(6) The incorporation of more gain in the amplifier than is necessary to operate in the Amateur Radio Service. For purposes of this paragraph, an amplifier must meet the following requirements:

(i) No amplifier shall be capable of achieving designed output (or designed d.c. input) power when driven with

less than 50 watts mean radio frequency input power;

(ii) No amplifier shall be capable of amplifying the input RF driving signal by more than 15 decibels. (This gain limitation is determined by the ratio of the input RF driving signal to the RF output power of the amplifier where both signals are expressed in peak envelope power or mean power.) If the amplifier has a designed peak envelope power output of less than 1,500 watts, the gain allowance is reduced accordingly. For example, an amplifier with a designed peak envelope output power of 500 watts shall not be capable of amplifying the input RF driving signal by more than 10 decibels;

(iii) The amplifier shall not exhibit more gain than permitted by paragraph (d)(6)(ii) of this section when driven by a radio frequency input signal of less than 50 watts mean power; and

(iv) The amplifier shall be capable of sustained operation at its designed power level.

(7) Any attenuation in the input of the amplifier which, when removed or modified, would permit the amplifier to function at its designed output power when driven by a radio frequency input signal of less than 50 watts mean power.

[43 FR 12689, Mar. 27, 1978, as amended at 48 FR 34748, Aug. 1, 1983]

Subpart D—Operating Requirements and Procedures

GENERAL

§ 97.78 Practice to be observed by all licensees.

In all respects not specifically covered by these regulations each amateur station shall be operated in accordance with good engineering and good amateur practice.

[28 FR 14188, Dec. 21, 1963. Redesignated at 43 FR 12689, Mar. 27, 1978]

§ 97.79 Control operator requirements.

(a) The licensee of an amateur station shall be responsible for its proper operation.

(b) Every amateur radio station, when in operation, shall have a control operator. The control operator shall be present at a control point of the station, except when the station is operated under automatic control. (Automatic control is only permitted where specifically authorized by the rules of this part.) The control operator may be the station licensee, if a licensed amateur radio operator, or may be another amateur radio operator with the required class of license and designated by the station licensee. The control operator shall also be responsible, together with the station licensee, for the proper operation of the station. (For purposes of enforcement of the rules of this part, the FCC will presume that the station licensee is, at all times, the control operator of the station, unless documentation exists to the contrary.)

(c) An amateur station may only be operated in the manner and to the extent permitted by the operator privileges authorized for the class of license held by the control operator, but may exceed those of the station licensee provided proper station identification procedures are performed.

(d) The licensee of an amateur radio station may permit any third party to participate in amateur radio communication from his station: *Provided*, That a control operator is present and continuously monitors and supervises the radiocommunication to insure compliance with the rules.

[37 FR 18545, Sept. 13, 1972, as amended at 37 FR 21998, Oct. 18, 1972; 48 FR 26607, June 9, 1983]

§ 97.81 Authorized apparatus.

(a) An amateur station license authorizes the use, under control of the licensee, of all transmitting apparatus at the fixed location specified in the station license which is operated on any frequency or frequencies allocated to the Amateur Radio Service, and, in addition, authorizes the use, under control of the licensee, of portable and mobile transmitting apparatus operated at other locations.

(b) The apparatus authorized for use by paragraph (a) of this section shall be available for inspection upon re-

quest by an authorized Commission representative.

[48 FR 26456, June 8, 1983]

§ 97.82 Availability of operator license.

Each amateur radio operator must have the original or a photocopy of his or her operator license in his or her personal possession when serving as the control operator of an amateur radio station. The original license shall be available for inspection by any authorized Government official upon request made by an authorized representative of the Commission, except when such license has been filed with application for modification or renewal thereof, or has been mutilated, lost or destroyed, and request has been made for a duplicate license in accordance with § 97.57.

[44 FR 73101, Dec. 17, 1979]

§ 97.83 Availability of station license.

The original license of each amateur station or a photocopy thereof shall be posted in a conspicuous place in the room occupied by the licensed operator while the station is being operated at a fixed location or shall be kept in his personal possession. When the station is operated at other than a fixed location, the original station license or a photocopy thereof shall be kept in the personal possession of the station licensee (or a licensed representative) who shall be present at the station while it is being operated as a portable or mobile station. The original station license shall be available for inspection by any authorized Government official at all times while the station is being operated and at other times upon request made by an authorized representative of the Commission, except when such license has been filed with application for modification or renewal thereof, or has been mutilated, lost, or destroyed, and request has been made for a duplicate license in accordance with § 97.57.

[28 FR 14188, Dec. 21, 1963. Redesignated at 43 FR 15332; Apr. 12, 1978]

§ 97.84 Station identification.

(a) Each amateur radio station shall give its call sign at the end of each

communication, and every ten minutes or less during a communication.

(b) Under conditions when the control operator is other than the station licensee, the station identification shall be the assigned call sign for that station. However, when a station is operated within the privileges of the operator's class of license but which exceeds those of the station licensee, station identification shall be made by following the station call sign with the operator's primary station call sign (i.e. WN4XYZ/W4XX).

(c) An amateur radio station in repeater operation or a station in auxiliary operation used to relay automatically the signals of other stations in a system of stations shall be identified by radiotelephony or radiotelegraphy at a level of modulation sufficient to be intelligible through the repeated transmission at intervals not to exceed ten minutes.

(d) When an amateur radio station is in repeater, auxiliary or beacon operation, the following additional requirements shall apply:

(1) When identifying by radiotelephony, a station in repeater operation shall transmit the word "repeater" at the end of the station call sign. When identifying by radiotelegraphy, a station in repeater operation shall transmit the fraction bar DN followed by the letters "RPT" or "R" at the end of the station call sign. (The requirements of this subparagraph do not apply to stations having call signs prefixed by the letters "WR".)

(2) When identifying by radiotelephony, a station in auxiliary operation shall transmit the word "auxiliary" at the end of the station call sign. When identifying by radiotelegraphy, a station in auxiliary operation shall transmit the fraction bar DN followed by the letters "AUX" or "A" at the end of the station call sign.

(3) When identifying by radiotelephony, a station in beacon operation shall transmit the word "beacon" at the end of the station call sign. When identifying by radiotelegraphy, a station in beacon operation shall transmit the fraction bar DN followed by the letters "BCN" or "B" at the end of the station call sign. This station identification shall be made at intervals

not to exceed one minute during any period of operation.

(e) A station in auxiliary operation may be identified by the call sign of its associated station.

(f) When operating under the temporary operating authority permitted by § 97.35 with privileges which exceed the privileges for the class of operator license currently held by the licensee, a licensee must identify in the following manner:

(1) On radiotelephony, by the transmission of the station call sign, followed by the word "temporary", followed by the identifier code for the new class of license for which the licensee has qualified (see § 97.35).

(2) On radiotelegraphy, by the transmission of the station call sign, followed by the fraction bar **DN**, followed by the identifier code for the new class of license for which the licensee has qualified (see § 97.35).

(g) The identification required by this section shall be given on each frequency being utilized for transmission and shall be made in one of the following manners:

(1) By telegraphy using the international Morse code (if this identification is made by an automatic device used only for identification, the code speed shall not exceed 20 words per minute);

(2) By telephony using the English language (the Commission encourages the use of a nationally or internationally recognized standard phonetic alphabet as an aid for correct telephone identification);

(3) By telegraphy using any code authorized by § 97.69(b), when the particular code is used for transmission of all or part of the communication or when the communication is transmitted in any digital code on frequencies above 50 MHz; or

(4) By video using readily legible characters when A5 emissions are used, the monochrome portions of which conform, at a minimum, to the monochrome transmission standards of § 73.682(a) (6) through (13), inclusive (with the exception of § 73.682(a)(9) (iii) and (iv)).

(5) When transmitting spread spectrum, by narrow band emission using the method described in paragraph (g)

(1) or (2) of this section, narrow band identification transmissions must be on only one frequency in each band being used. Alternatively, the station identification may be transmitted while in spread spectrum operation by changing one or more parameters of the emission in a fashion such that CW or SSB or narrow band FM receivers can be used to identify the sending station.

(h) At the end of an exchange of third party communications with a station located in a foreign country, each amateur radio station shall also give the call sign of the station with which third party communications were exchanged.

(Secs. 4(i) and 303, Communications Act of 1934, as amended (47 U.S.C. 154(i) and 303), and in § 1.429 of the Commission's Rules (47 CFR 1.429))

[32 FR 17430, Dec. 5, 1967. Redesignated and amended at 43 FR 15322, Apr. 12, 1978; 46 FR 50800, Oct. 15, 1981; 47 FR 50705, Nov. 9, 1982; 48 FR 26456, June 8, 1983; 49 FR 30313, July 30, 1984; 50 FR 23426, June 4, 1985]

EFFECTIVE DATE NOTE: At 50 FR 23426, June 4, 1985, § 97.84(g)(5) was added, effective June 1, 1986.

§ 97.85 Repeater operation.

(a) Emissions from a station in repeater operation shall be discontinued within five seconds after cessation of radio communications by the user station. Provisions to limit automatically the access to a station in repeater operation may be incorporated but are not mandatory.

(b) Except for operation under automatic control, as provided in paragraph (e) of this section, the transmitting and receiving frequencies used by a station in repeater operation shall be continuously monitored by a control operator immediately before and during periods of operation.

(c) A station in repeater operation shall not concurrently retransmit amateur radio signals on more than one frequency in the same amateur frequency band, from the same location.

(d) A station in repeater operation shall be operated in a manner insuring that it is not used for broadcasting (see § 97.113).

(e) A station in repeater operation, either locally controlled or remotely controlled, may also be operated by automatic control when devices have been installed and procedures have been implemented to ensure compliance with the rules when a duty control operator is not present at a control point of the station. Upon notification by the Commission of improper operation of a station under automatic control, operation under automatic control shall be immediately discontinued until all deficiencies have been corrected.

(f) The licensee of an amateur radio station, before modifying an existing station in repeater operation in the National Radio Quiet Zone, or before placing his/her amateur station in repeater operation in the National Radio Quiet Zone, shall, after May 13, 1981, give written notification thereof to the Director, National Radio Astronomy Observatory, P.O. Box No. 2, Green Bank, West Virginia, 24944. Station modification is any change in frequency; power; antenna height or directivity; or the location of the station.

(1) The notification shall include the geographical coordinates of the antenna, antenna height, antenna directivity, if any, proposed frequency, type of emission, and power.

(2) The National Radio Quiet Zone is the area bounded by 39°15' N. on the north, 78°30' W. on the east, 37°30' N. on the south, and 80°30' W. on the west.

(3) If an objection to the proposed operation is received by the Commission from the National Radio Astronomy Observatory at Green Bank, Pocahontas County, West Virginia, for itself or on behalf of the Naval Research Laboratory at Sugar Grove, Pendleton County, West Virginia, within 20 days from the date of notification, the Commission will consider all aspects of the problem and take whatever action is deemed appropriate.

(g) Each station in repeater operation transmitting with an effective radiated power greater than 100 watts on frequencies between 29.5 and 420 MHz, or 400 watts on frequencies between 420 and 1215 MHz, shall have

the following information included in the station records during any period of operation:

(1) The location of the station transmitting antenna marked upon a topographic map having contour intervals and having a scale of 1:250,000 (indexes and ordering information for suitable maps are available from the U.S. Geological Survey, Washington, DC 20242, or from the Federal Center, Denver, CO 80255);

(2) The transmitting antenna height above average terrain (see Appendix 5);

(3) The effective radiated power in the horizontal plane for the main lobe of antenna pattern, calculated for the maximum transmitter output power which occurs during operation;

(4) The maximum transmitter output power which occurs during operation;

(5) The loss in the transmission line between the transmitter and the antenna (including devices such as duplexers, cavities or circulators), expressed in decibels; and

(6) The relative gain in the horizontal plane of the transmitting antenna.

(h) All amateur frequency bands above 29.5 MHz are available for repeater operation, except 50.0-52.0 MHz, 144.0-144.5 MHz, 145.5-146.0 MHz, 220.0-220.5 MHz, 431.0-433.0 MHz, and 435.0-438.0 MHz. Both the input (receiving) and output (transmitting) frequency of a station in repeater operation shall be frequencies available for repeater operation.

[43 FR 15332, Apr. 12, 1978, as amended at 46 FR 21171, Apr. 9, 1981; 48 FR 26608, June 9, 1983; 48 FR 30132, June 30, 1983; 50 FR 13795, Apr. 8, 1985; 50 FR 25246, June 18, 1985]

§ 97.86 Auxiliary operation.

(a) A station in auxiliary operation, either locally controlled or remotely controlled, may also be operated by automatic control when it is operated as part of a system of stations in repeater operation operated under automatic control.

(b) If a station in auxiliary operation is relaying signals of another amateur radio station(s) to a station in repeater operation, the station in auxiliary op-

eration may use an input (receiving) frequency in frequency bands reserved for auxiliary operation, repeater operation, or both.

(c) A station in auxiliary operation shall be used only to communicate with stations shown in the system network diagram.

(d) All amateur frequency bands above 220.5 MHz, except 431-433 MHz and 435-438 MHz, are available for auxiliary operation.

[43 FR 15332, Apr. 12, 1978, as amended at 50 FR 13795, Apr. 8, 1985]

§ 97.87 Beacon operation.

(a) A station in beacon operation shall not concurrently operate on more than one frequency in the same amateur frequency band, from the same location.

(b) A station in beacon operation, either locally controlled or remotely controlled, may also be operated by automatic control when devices have been installed and procedures have been implemented to ensure compliance with the rules when the duty control operator is not present at a control point of the station.

(c) Beacon operation shall cease upon notification by any Engineer-in-Charge of a Commission field facility that the station is operating improperly or causing undue interference to other operations. Beacon operation shall not resume without prior approval of the Engineer-in-Charge.

(d) The licensee of an amateur radio station, before modifying an existing station in automatically-controlled beacon operation in the National Radio Quiet Zone, or before placing his/her station in automatically-controlled beacon operation in the National Radio Quiet Zone, shall give written notification thereof to the Director, National Radio Astronomy Observatory, P.O. Box 2, Green Bank, West Virginia 24944. Station modification is any change in frequency, power, antenna height or directivity, or the location of the station. In such cases, the rules of § 97.85(f) (1), (2) and (3) shall apply.

(e) The following amateur frequency bands and emissions are available for automatically-controlled beacon operation: 28.20-28.30 MHz, 50.06-50.08

MHz, 144.05-144.06 MHz, 220.05-220.06 MHz, 222.05-222.06 MHz, and 432.07-432.08 MHz using type N0N, A1A, F1B or J2A emissions (when type F1B or J2A emissions are employed in these bands, the radio or audio frequency shift, as appropriate, shall not exceed 1000 Hz). Additionally, all amateur frequency bands above 450 MHz are available for automatically-controlled beacon operation using emission types authorized under § 97.61, provided that the licensee is authorized to operate on the frequency under § 97.7.

[47 FR 50705, Nov. 9, 1982, as amended at 50 FR 13795, Apr. 8, 1985]

§ 97.88 Operation of a station by remote control.

An amateur radio station may be operated by remote control only if there is compliance with the following:

(a) A photocopy of the license for the remotely controlled station shall be posted in a conspicuous place at the station location.

(b) The name, address, and telephone number of the remotely controlled station licensee and at least one control operator shall be posted in a conspicuous place at the remotely controlled transmitter location.

(c) Except for operation under automatic control, a control operator shall be on duty when the station is being remotely controlled. Immediately before and during the periods the remotely controlled station is in operation, the frequencies used for emission by the remotely controlled station shall be monitored by the control operator. The control operator shall terminate all transmissions upon any deviation from the rules.

(d) Provisions must be incorporated to limit transmission to a period of no more than 3 minutes in the event of malfunction in the control link.

(e) A station in repeater operation shall be operated by radio remote control only when the control link uses frequencies other than the input (receiving) frequencies of the station in repeater operation.

(f) The station records shall include during any period of operation:

(1) The names, addresses, and call signs of all persons authorized by the

station licensee to be control operators; and

(2) A functional block diagram of the control link and a technical explanation sufficient to describe its operation.

(g) Each remotely controlled station shall be protected against unauthorized station operation, whether caused by activation of the control link, or otherwise.

[39 FR 21054; June 18, 1974, as amended at 43 FR 15332, Apr. 12, 1978; 48 FR 26608, June 9, 1983]

§ 97.89 Points of communications.

(a) Amateur stations may communicate with:

(1) Other amateur stations, excepting those prohibited by Appendix 2.

(2) Stations in other services licensed by the Commission and with U.S. Government stations for civil defense purposes in accordance with Subpart F of this part, in emergencies and, on a temporary basis, for test purposes.

(3) Any station which is authorized by the Commission to communicate with amateur stations.

(b) Amateur radio stations may transmit one-way signals to receiving apparatus while in beacon operation or radio control operation.

[37 FR 18545, Sept. 13, 1972, as amended at 43 FR 15333, Apr. 12, 1978; 47 FR 50705, Nov. 9, 1982]

§ 97.90 System network diagram required.

When a station has one or more associated stations, that is, stations in repeater or auxiliary operation, a system network diagram (see § 97.3(v)) shall be included in the station records during any period of operation.

[48 FR 26608, June 9, 1983]

§ 97.91 [Reserved]

§ 97.92 Record of operations.

When deemed necessary by the Engineer-in-Charge (EIC) of a Commission field facility to assure compliance with the rules of this part, a station licensee shall maintain a record of station operations containing such items of information as the EIC may require under § 0.314(x).

[48 FR 26608, June 9, 1983]

§ 97.93 Modulation of carrier.

Except for brief tests or adjustments an amateur radiotelephone station shall not emit a carrier wave on frequencies below 51 megahertz unless modulated for the purpose of communication. Single audiofrequency tones may be transmitted for test purposes of short duration for the development and perfection of amateur radio telephone equipment.

STATION OPERATION AWAY FROM AUTHORIZED LOCATION

§ 97.95 Operation away from the authorized fixed station location.

(a) Operation within the United States, its territories, or possessions is permitted as follows:

(1) When there is no change in the authorized fixed operation station location, an amateur radio station, other than a military recreation station, may be operated portable or mobile under its station license anywhere in the United States, its territories or possessions, subject to § 97.61.

(2) When the authorized fixed station location is changed, the licensee shall submit an application for modification of the station license in accordance with § 97.47.

(b) When outside the continental limits of the United States, its territories, or possessions, an amateur radio station may be operated as portable or mobile only under the following conditions:

(1) Operation may not be conducted within the jurisdiction of a foreign government except pursuant to, and in accordance with, express authority granted to the licensee by such foreign government. When a foreign government permits Commission licensees to operate within its territory, the amateur frequency bands which may be used shall be as prescribed or limited by that government. (See Appendix 4 of this part for the text of treaties or agreements between the United States and foreign governments relative to reciprocal amateur radio operation.)

(2)–(3) [Reserved]

(4) Except as otherwise provided, amateur operation conducted outside

the jurisdiction of a foreign government shall comply with all requirements of Part 97 of this chapter.

[28 FR 14188, Dec. 21, 1963, as amended at 37 FR 6593, Mar. 31, 1972; 41 FR 47451, Oct. 29, 1976; 42 FR 45309, Sept. 9, 1977; 43 FR 7324, Feb. 22, 1978; 43 FR 15333, Apr. 12, 1978; 47 FR 29675, July 8, 1982; 50 FR 13796, Apr. 8, 1985]

SPECIAL PROVISIONS

§ 97.99 Stations used only for radio control or remote model craft and vehicles.

An amateur radio station in radio control operation with a mean output power not exceeding one watt may, when used for the control of a remote model craft or vehicle, be operated under the special provisions of this section, provided that a writing indicating the station call sign and the licensee's name and address is affixed to the transmitter.

(a) Station identification is not required for transmissions directed only to a remote model craft or vehicle.

(b) Transmissions containing only control signals directed only to a remote model craft or vehicle are not considered to be codes or ciphers in the context of the meaning of § 97.117.

[38 FR 1506, Jan. 13, 1973, as amended at 41 FR 47451, Oct. 29, 1976; 48 FR 26456, June 8, 1983; 48 FR 26608, June 9, 1983; 48 FR 29874, June 29, 1983]

§ 97.101 Mobile stations aboard ships or aircraft.

In addition to complying with all other applicable rules, an amateur mobile station operated on board a ship or aircraft must comply with all of the following special conditions:

(a) The installation and operation of the amateur mobile station shall be approved by the master of the ship or captain of the aircraft;

(b) The amateur mobile station shall be separate from and independent of all other radio equipment, if any, installed on board the same ship or aircraft;

(c) The electrical installation of the amateur mobile station shall be in accord with the rules applicable to ships or aircraft as promulgated by the appropriate government agency;

(d) The operation of the amateur mobile station shall not interfere with the efficient operation of any other radio equipment installed on board the same ship or aircraft; and

(e) The amateur mobile station and its associated equipment, either in itself or in its method of operation, shall not constitute a hazard to the safety of life or property.

[28 FR 14188, Dec. 21, 1963]

EMERGENCY OPERATIONS

§ 97.107 Operation in emergencies.

In the event of an emergency disrupting normally available communication facilities in any widespread area or areas, the Commission, in its discretion, may declare that a general state of communications emergency exists, designate the area or areas concerned, and specify the amateur frequency bands, or segments of such bands, for use only by amateurs participating in emergency communication within or with such affected area or areas. Amateurs desiring to request the declaration of such a state of emergency should communicate with the Commission's Engineer in Charge of the area concerned. Whenever such declaration has been made, operation of and with amateur stations in the area concerned shall be only in accordance with the requirements set forth in this section, but such requirements shall in nowise affect other normal amateur communication in the affected area when conducted on frequencies not designated for emergency operation.

(a) All transmissions within all designated amateur communications bands¹ other than communications re-

¹ The frequency 5167.5 kHz may be used by any station authorized under this part to communicate with any other station in the State of Alaska for emergency communications. No airborne operations will be permitted on this frequency. All stations operating on this frequency must be located in or within 50 nautical miles of the State of Alaska. The frequency 5167.5 kHz may be used by licensees in the Alaska-private fixed service for calling and listening, but only for establishing communication before switching to another frequency.

lating directly to relief work, emergency service, or the establishment and maintenance of efficient amateur radio networks for the handling of such communications shall be suspended. Incidental calling, answering, testing or working (including casual conversations, remarks or messages) not pertinent to constructive handling of the emergency situation shall be prohibited within these bands.

(b) The Commission may designate certain amateur stations to assist in the promulgation of information relating to the declaration of a general state of communications emergency, to monitor the designated amateur emergency communications bands, and to warn noncomplying stations observed to be operating in those bands. Such station, when so designated, may transmit for that purpose on any frequency or frequencies authorized to be used by that station, provided such transmissions do not interfere with essential emergency communications in progress; however, such transmissions shall preferably be made on authorized frequencies immediately adjacent to those segments of the amateur bands being cleared for the emergency. Individual transmissions for the purpose of advising other stations of the existence of the communications emergency shall refer to this section by number (§ 97.107) and shall specify, briefly and concisely, the date of the Commission's declaration, the area and nature of the emergency, and the amateur frequency bands or segments of such bands which constitute the amateur emergency communications bands at the time. The designated stations shall not enter into discussions with other stations beyond furnishing essential facts relative to the emergency, or acting as advisors to stations desiring to assist in the emergency, and the operators of such designated stations shall report fully to the Commission the identity of any stations failing to comply, after notice, with any of the pertinent provisions of this section.

(c) The special conditions imposed under the provisions of this section shall cease to apply only after the Commission, or its authorized representative, shall have declared such

general state of communications emergency to be terminated; however, nothing in this paragraph shall be deemed to prevent the Commission from modifying the terms of its declaration from time to time as may be necessary during the period of a communications emergency, or from removing those conditions with respect to any amateur frequency band or segment of such band which no longer appears essential to the conduct of the emergency communications.

(Secs. 4(i) and 303 (c) and (r), Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303(r))

[28 FR 14188, Dec. 21, 1963, as amended at 39 FR 44985, Dec. 30, 1974; 47 FR 29676, July 8, 1982; 49 FR 32201, Aug. 13, 1984]

Subpart E—Prohibited Practices and Administrative Sanctions

SOURCE: 28 FR 14191, Dec. 21, 1963, unless otherwise noted.

PROHIBITED TRANSMISSIONS AND PRACTICES

§ 97.110 Business communications prohibited.

The transmission of business communications by an amateur radio station is prohibited except for emergency communications (see § 97.3(w)).

[50 FR 25247, June 18, 1985]

§ 97.111 Limitations on international communications.

Transmissions between amateur radio stations of different countries, when permitted, must be limited to messages of a technical nature relating to tests, and, to remarks of a personal character for which, by reason of their unimportance, recourse to the public telecommunications service is not justified.

[48 FR 33000, July 20, 1983]

§ 97.112 No remuneration for use of station.

(a) An amateur station shall not be used to transmit or receive messages for hire, nor for communication for material compensation, direct or indirect, paid or promised.

(b) Control operators of a club station may be compensated when the club station is operated primarily for the purpose of conducting amateur radio-communication to provide telegraphy practice transmissions intended for persons learning or improving proficiency in the international Morse Code, or to disseminate information bulletins consisting solely of subject matter having direct interest to the Amateur Radio Service provided:

(1) The station conducts telegraphy practice and bulletin transmission for at least 40 hours per week;

(2) The station schedules operations on at least six (6) allocated medium and high frequency amateur bands using reasonable measures to maximize coverage.

(3) The schedule of normal operating times and frequencies is published at least 30 days in advance of the actual transmissions.

Control operators may accept compensation only for such periods of time during which the station is transmitting telegraphy practice or bulletins. A control operator shall not accept any direct or indirect compensation for periods during which the station is transmitting material other than telegraphy practice or bulletins.

(28 FR 14191, Dec. 21, 1963. Redesignated at 37 FR 18546, Sept. 13, 1972, and amended at 39 FR 9444, Mar. 11, 1974; 47 FR 29676, July 8, 1982; 50 FR 18664, May 2, 1985)

§ 97.113 Broadcasting and broadcast related activities prohibited.

(a) An amateur station shall not be used to engage in any form of broadcasting, that is, the dissemination of radio communications intended to be received by the public directly or by intermediary relay stations.

(b) An amateur station may not be used for any activity related to program production or news gathering for broadcast purposes.

(c) An amateur station shall not retransmit programs or signals emanating from any class of radio station other than amateur, except for emergency communications (see § 97.3(w)).

(d) The following one-way amateur transmissions are not considered broadcasting:

(1) Beacon or radio control operation;

(2) Information bulletins consisting solely of subject matter relating to amateur radio;

(3) Transmissions intended for persons learning or improving proficiency in the international Morse code; and

(4) Emergency communications (see § 97.3(w)).

(e) Round table discussions or net operations where more than two amateur stations are in communication with one another are not considered broadcasting.

[50 FR 25247, June 18, 1985; 50 FR 41895, Oct. 16, 1985]

§ 97.114 Limitations on third-party traffic.

The transmission or delivery of the following amateur radiocommunication is prohibited:

(a) International third-party traffic except with countries which have assented thereto;

(b) Third-party traffic involving material compensation, either tangible or intangible, direct or indirect, to a third party, a station licensee, a control operator, or any other person;

(c) Except for emergency communications as defined in this part, third-party traffic consisting of business communications on behalf of any party.

[37 FR 21998, Oct. 18, 1972, as amended at 48 FR 33000, July 20, 1983; 49 FR 48551, Dec. 13, 1984]

§ 97.115 Music prohibited.

The transmission of music by an amateur station is forbidden.

§ 97.116 Amateur radiocommunication for unlawful purposes prohibited.

The transmission of radiocommunication or messages by an amateur radio station for any purpose, or in connection with any activity, which is contrary to Federal, State, or local law is prohibited.

[37 FR 21999, Oct. 18, 1972]

§ 97.117 Codes and ciphers prohibited.

The transmission by radio of messages in codes or ciphers in domestic and international communications to

or between amateur stations is prohibited. All communications regardless of type of emission employed shall be in plain language except that generally recognized abbreviations established by regulation or custom and usage are permissible as are any other abbreviations or signals where the intent is not to obscure the meaning but only to facilitate communications.

§ 97.119 Obscenity, indecency, profanity.

No licensed radio operator or other person shall transmit communications containing obscene, indecent, or profane words, language, or meaning.

§ 97.121 False signals.

An amateur radio station must not transmit:

(a) False or deceptive signals or communications by radio; *NOR*

(b) For purposes of identifying the station, any call sign which has not been assigned to it. Notwithstanding the foregoing, when a station is operated within the privileges of the operator's class of license but which exceed those of the station licensee, station identification must be made by following the station call sign of the station being operated with the operator's primary station call sign in accordance with § 97.84(b).

[50 FR 19361, May 8, 1985]

§ 97.123 Unidentified communications.

No licensed radio operator shall transmit unidentified radio communications or signals.

§ 97.125 Interference.

No licensed radio operator shall willfully or maliciously interfere with or cause interference to any radio communication or signal.

§ 97.126 Retransmitting radio signals.

(a) An amateur radio station, except a station in repeater operation or auxiliary operation, shall not automatically retransmit the radio signals of other amateur radio stations.

(b) A remotely controlled station, other than a remotely controlled station in repeater operation or auxiliary operation, shall automatically retransmit only the radio signals of stations

in auxiliary operation shown on the remotely controlled station's system network diagram.

[43 FR 15333, Apr. 20, 1978, as amended at 47 FR 29676, July 8, 1982]

§ 97.127 Damage to apparatus.

No licensed radio operator shall willfully damage, or cause or permit to be damaged, any radio apparatus or installation in any licensed radio station.

§ 97.129 Fraudulent licenses.

No licensed radio operator or other person shall obtain or attempt to obtain, or assist another to obtain or attempt to obtain, an operator license by fraudulent means.

ADMINISTRATIVE SANCTIONS

§ 97.131 Restricted operation.

(a) If the operation of an amateur station causes general interference to the reception of transmissions from stations operating in the domestic broadcast service when receivers of good engineering design including adequate selectivity characteristics are used to receive such transmissions and this fact is made known to the amateur station licensee, the amateur station shall not be operated during the hours from 8 p.m. to 10:30 p.m., local time, and on Sunday for the additional period from 10:30 a.m. until 1 p.m., local time, upon the frequency or frequencies used when the interference is created.

(b) In general, such steps as may be necessary to minimize interference to stations operating in other services may be required after investigation by the Commission.

§ 97.133 Second notice of same violation.

In every case where an amateur station licensee is cited within a period of 12 consecutive months for the second violation of the provisions of §§ 97.61, 97.63, 97.65, or 97.73, the station licensee, if directed to do so by the Commission, shall not operate the station and shall not permit it to be operated from 6 p.m. to 10:30 p.m., local time, until written notice has been received authorizing the resumption of full-time operation. This notice will

not be issued until the licensee has reported on the results of tests which he/she has conducted with at least two other amateur stations at hours other than 6 p.m. to 10:30 p.m., local time. Such tests are to be made for the specific purpose of aiding the licensee in determining whether the emissions of the station are in accordance with the Commission's rules. The licensee shall report to the Commission the observations made by the cooperating amateur licensees in relation to the reported violations. This report shall include a statement as to the corrective measures taken to insure compliance with the rules.

[47 FR 29676, July 8, 1982, as amended at 48 FR 29874, June 29, 1983]

§ 97.135 Third notice of same violation.

In every case where an amateur station licensee is cited within a period of 12 consecutive months for the third violation of § 97.61, 97.63, 97.65, or 97.73, the station licensee, if directed by the Commission, shall not operate the station and shall not permit it to be operated from 8 a.m. to 12 midnight, local time, except for the purpose of transmitting a prearranged test to be observed by a monitoring station of the Commission to be designated in each particular case. The station shall not be permitted to resume operation during these hours until the licensee is authorized by the Commission, following the test, to resume full-time operation. The results of the test and the licensee's record shall be considered in determining the advisability of suspending the operator license or revoking the station license, or both.

[28 FR 14191, Dec. 21, 1963, as amended at 47 FR 29676, July 8, 1982]

§ 97.137 Answers to notices of violations.

Any licensee receiving official notice of a violation of the terms of the Communications Act of 1934, as amended, any legislative act, Executive Order, treaty to which the United States is a party, or the rules of the Federal Communications Commission, shall, within 10 days from such receipt, send a written answer direct to the office of the Commission originating the official notice: *Provided, however,* That if an

answer cannot be sent or an acknowledgment made within such 10-day period by reason of illness or other unavoidable circumstances, acknowledgment and answer shall be made at the earliest practicable date with a satisfactory explanation of the delay. The answer to each notice shall be complete in itself and shall not be abbreviated by reference to other communications or answers to other notices. If the notice relates to some violation that may be due to the physical or electrical characteristics of transmitting apparatus, the answer shall state fully what steps, if any, are taken to prevent future violations, and if any new apparatus is to be installed, the date such apparatus was ordered, the name of the manufacturer, and promised date of delivery. If the notice of violation relates to some lack of attention or improper operation of the transmitter, the name of the operator in charge shall be given.

[28 FR 14191, Dec. 21, 1963, as amended at 48 FR 29874, June 29, 1983]

Subpart F—Radio Amateur Civil Emergency Service (RACES)

SOURCE: 41 FR 8782, Mar. 1, 1976, unless otherwise noted.

GENERAL

§ 97.161 Basis and purpose.

The Radio Amateur Civil Emergency Service provides for amateur radio operation for civil defense communications purposes only, during periods of local, regional or national civil emergencies, including any emergency which may necessitate invoking of the President's War Emergency Powers under the provisions of section 606 of the Communications Act of 1934, as amended.

§ 97.163 Definitions.

For the purposes of this subpart, the following definitions are applicable:

(a) *Radio Amateur Civil Emergency Service.* A radiocommunication service conducted by volunteer licensed amateur radio operators, for providing emergency radiocommunications to

local, regional, or state civil defense organizations.

(b) *RACES station.* An amateur radio station licensed to a civil defense organization, at a specific land location, for the purpose of providing the facilities for amateur radio operators to conduct amateur radiocommunications in the Radio Amateur Civil Emergency Service.

§ 97.165 Applicability of rules.

In all cases not specifically covered by the provisions contained in this Subpart, amateur radio stations and RACES stations shall be governed by the provisions of the rules governing amateur radio stations and operators (Subparts A through E of this part).

STATION AUTHORIZATIONS

§ 97.169 Station license required.

No transmitting station shall be operated in the Radio Amateur Civil Emergency Service unless:

(a) The station is licensed as a RACES station by the Federal Communications Commission, or

(b) The station is an amateur radio station licensed by the Federal Communications Commission, and is certified by the responsible civil defense organization as registered with that organization.

§ 97.171 Eligibility for RACES station license.

(a) A RACES station will only be licensed to a local, regional, or state civil defense organization.

(b) Only modification and/or renewal station licenses will be issued for RACES stations. No new licenses will be issued for RACES stations.

[47 FR 29676, July 8, 1982, as amended at 48 FR 29875, June 29, 1983]

§ 97.173 Application for RACES station license.

(a) Each application for a RACES station license shall be made on the FCC Form 610-B.

(b) The application shall be signed by the civil defense official responsible for the coordination of all civil defense activities in the area concerned.

(c) The application shall be countersigned by the responsible official for

the governmental entity served by the civil defense organization.

(d) If the application is for a RACES station to be in any special manner covered by § 97.42, those showings specified for non-RACES stations shall also be submitted.

[41 FR 8782, Mar. 1, 1976, as amended at 48 FR 26456, June 8, 1983]

§ 97.175 Amateur radio station registration in civil defense organization.

No amateur radio station shall be operated in the Radio Amateur Civil Emergency Service unless it is certified as registered in a civil defense organization by that organization.

OPERATING REQUIREMENTS

§ 97.177 Operator requirements.

No person shall be the control operator of a RACES station, or shall be the control operator of an amateur radio station conducting communications in the Radio Amateur Civil Emergency Service unless that person holds a valid amateur radio operator license and is certified as enrolled in a civil defense organization by that organization.

§ 97.179 Operator privileges.

Operator privileges in the Radio Amateur Civil Emergency Service are dependent upon, and identical to, those for the class of operator license held in the Amateur Radio Service.

§ 97.181 Availability of RACES station license and operator licenses.

(a) The original license of each RACES station, or a photocopy thereof, shall be attached to each transmitter of such station, and at each control point of such station. Whenever a photocopy of the RACES station license is utilized in compliance with this requirement, the original station license shall be available for inspection by any authorized Government official at all times while the station is being operated and at other times upon request made by an authorized representative of the Commission, except when such license has been filed with application for modification or renewal thereof, or has been mutilated, lost,

or destroyed, and request has been made for a duplicate license in accordance with § 97.57.

(b) In addition to the operator license availability requirements of § 97.82, a photocopy of the control operator's amateur radio operator license shall be posted in a conspicuous place at the control point of the RACES station.

[41 FR 8782, Mar. 1, 1976, as amended at 43 FR 15333, Apr. 20, 1978]

TECHNICAL REQUIREMENTS

§ 97.185 Frequencies available.

(a) All of the authorized frequencies and emissions allocated to the Amateur Radio Service are also available to the Radio Amateur Civil Emergency Service on a shared basis.

(b) In the event of an emergency which necessitates the invoking of the President's War Emergency Powers under the provisions of section 606 of the Communications Act of 1934, as amended (47 U.S.C. 706), RACES stations and amateur radio stations participating in RACES will be limited in operation to the following frequencies and frequency bands unless otherwise directed by the President of the United States, by a person or persons designated by the President of the United States or by the FCC on behalf of the President of the United States:

FREQUENCY OR FREQUENCY BANDS

	Limitations
kHz:	
1800-1825	
1975-2000	
3500-3550	
3930-3980	
3984-4000	
3997	2
7079-7125	
7245-7255	
10100-10150	1
14047-14053	
14220-14230	
14331-14350	
21047-21053	
21228-21267	
MHz:	
28.55-28.75	
29.237-29.273	
29.45-29.65	
50.35-50.75	
52-54	
53.30	2
144.50-145.71	

FREQUENCY OR FREQUENCY BANDS— Continued

	Limitations
146-148	
220-225	4
420-450	3, 5, 6
1240-1300	3
2390-2450	3

(c) *Limitations.* (1) This band is allocated to the fixed service on a primary basis outside the United States and its possessions. Transmissions of stations in the Amateur Radio Service in this band are secondary to foreign fixed service use in this band.

(2) For use in emergency areas when required to make initial contact with a military unit; also, for communications with military stations on matters requiring coordination.

(3) Those stations operating in the bands 420-450, 1240-1300 and 2390-2450 MHz shall not cause harmful interference to, and must tolerate any interference from, the Government Radiolocation Service; and also the Aeronautical Radionavigation Service in the case of the 1240-1300 MHz band.

(4) Those stations operating in the band 220-225 MHz shall not cause harmful interference to, and must tolerate any interference from, the Government Radiolocation Service until January 1, 1990. Additionally, the Fixed and Mobile Services shall have equal right of operation.

(5) No station shall operate north of Line A (see § 97.3(i)) in the 420-430 MHz band.

(6) In the band 420-450 MHz and within the following areas, the peak envelope power output of a transmitter used in the Amateur Radio Service shall not exceed 50 watts, unless expressly authorized by the Commission after mutual agreement, on a case-by-case basis, between the Federal Communications Commission Engineer-in-Charge at the applicable District Office and the Military Area Frequency Coordinator at the applicable military base:

(i) Those portions of Texas and New Mexico bounded on the south by latitude 31° 45' North, on the east by lon-

gitude 104° 00' West, on the north by latitude 34° 30' North, and on the west by longitude 107° 30' West;

(ii) The entire State of Florida including the Key West area and the areas enclosed within a 200-mile radius of Patrick Air Force Base, Florida (latitude 28° 21' North, longitude 80° 43' West), and within a 200-mile radius of Eglin Air Force Base, Florida (latitude 30° 30' North, longitude 86° 30' West);

(iii) The entire State of Arizona;

(iv) Those portions of California and Nevada south of latitude 37° 10' North, and the areas enclosed within a 200-mile radius of the Pacific Missile Test Center, Point Mugu, California (latitude 34° 09' North, longitude 119° 11' West).

(v) In the State of Massachusetts within a 160-kilometer (100 mile) radius around locations at Otis Air Force Base, Massachusetts (latitude 41° 45' North, longitude 70° 32' West).

(vi) In the State of California within a 240-kilometer (150 mile) radius around locations at Beale Air Force Base, California (latitude 39° 08' North, longitude 121° 26' West).

(vii) In the State of Alaska within a 160-kilometer (100 mile) radius of Clear, Alaska (latitude 64° 17' North, longitude 149° 10' West). (The Military Area Frequency Coordinator for this area is located at Elmendorf Air Force Base, Alaska.)

(viii) In the State of North Dakota within a 160-kilometer (100 mile) radius of Concrete, North Dakota (latitude 48° 43' North, longitude 97° 54' West). (The Military Area Frequency Coordinator for this area can be contacted at: HQ SAC/SXOE, Offutt Air Force Base, Nebraska 68113.)

(ix) In the States of Alabama, Florida, Georgia, and South Carolina within a 200 kilometer (124 mile) radius of Warner Robins Air Force Base, Georgia (latitude 32°38' North, longitude 83°35' West).

(x) In the State of Texas within a 200 kilometer (124 mile) radius of Goodfellow Air Force Base, Texas (latitude 31°25' North, longitude 100°24' West).

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended)

[49 FR 3188, Jan. 26, 1984, as amended at 49 FR 12706, Mar. 30, 1984; 49 FR 40415, Oct. 16, 1984; 49 FR 48551, Dec. 13, 1984; 50 FR 18664, May 2, 1985; 50 FR 33940, Aug. 22, 1985]

§ 97.189 Points of communications.

(a) RACES stations may only be used to communicate with:

(1) Other RACES stations;

(2) Amateur radio stations certified as being registered with a civil defense organization, by that organization;

(3) Stations in the Disaster Communications Service;

(4) Stations of the United States Government authorized by the responsible agency to exchange communications with RACES stations;

(5) Any other station in any other service regulated by the Federal Communications Commission, whenever such station is authorized by the Commission to exchange communications with stations in the Radio Amateur Civil Emergency Service.

(b) Amateur radio stations registered with a civil defense organization may only be used to communicate with:

(1) RACES stations licensed to the civil defense organization with which the amateur radio station is registered;

(2) Any of the following stations upon authorization of the responsible civil defense official for the organization in which the amateur radio station is registered:

(i) Any RACES station licensed to other civil defense organizations;

(ii) Amateur radio stations registered with the same or another civil defense organization;

(iii) Stations in the Disaster Communications Service;

(iv) Stations of the United States Government authorized by the responsible agency to exchange communications with RACES stations;

(v) Any other station in any other service regulated by the Federal Communications Commission, whenever such station is authorized by the Commission to exchange communications with stations in the Radio Amateur Civil Emergency Service.

§ 97.191 Permissible communications.

All communications in the Radio Amateur Civil Emergency Service

must be specifically authorized by the civil defense organization for the area served. Stations in this service may transmit only civil defense communications of the following types:

(a) Communications concerning impending or actual conditions jeopardizing the public safety, or affecting the national defense or security during periods of local, regional, or national civil emergencies:

(1) Communications directly concerning the immediate safety of life of individuals, the immediate protection of property, maintenance of law and order, alleviation of human suffering and need, and the combating of armed attack or sabotage;

(2) Communications directly concerning the accumulation and dissemination of public information or instructions to the civilian population essential to the activities of the civil defense organization or other authorized governmental or relief agencies.

(b) Communications for training drills and tests necessary to ensure the establishment and maintenance of orderly and efficient operation of the Radio Amateur Civil Emergency Service as ordered by the responsible civil defense organization served. Such tests and drills may not exceed a total time of one hour per week.

(c) Brief one way transmissions for the testing and adjustment of equipment.

[41 FR 8782, Mar. 1, 1976, as amended at 48 FR 29875, June 29, 1983]

§ 97.193 Limitations on the use of RACES stations.

(a) No station in the Radio Amateur Civil Emergency Service shall be used to transmit or to receive messages for hire, nor for communications for material compensation, direct or indirect, paid or promised.

(b) All messages which are transmitted in connection with drills or tests shall be clearly identified as such by use of the words "drill" or "test", as appropriate, in the body of the messages.

Subpart G—Operation of Amateur Radio Stations in the United States by Aliens Pursuant to Reciprocal Agreements

§ 97.301 Basis, purpose, and scope.

(a) The rules in this subpart are based on, and are applicable solely to, alien amateur operations pursuant to section 303(1)(3) and 310(c) of the Communications Act of 1934, as amended. (See Pub. L. 93-505, 88 Stat. 1576.)

(b) The purpose of this subpart is to implement Pub. L. 88-313 by prescribing the rules under which an alien, who holds an amateur operator and station license issued by his government (referred to in this subpart as an alien amateur), may operate an amateur radio station in the United States, in its possessions, and in the Commonwealth of Puerto Rico (referred to in this subpart only as the United States).

[40 FR 5368, Feb. 5, 1975 and 47 FR 29677, July 8, 1982]

§ 97.303 Permit required.

Before he may operate an amateur radio station in the United States, under the provisions of sections 303(1)(3) and 310(c) of the Communications Act of 1934, as amended, an alien amateur licensee must obtain a permit for such operation from the Federal Communications Commission. A permit for such operation shall be issued only to an alien holding a valid amateur operator and station authorization from his government, and only when there is in effect a bilateral agreement between the United States and that government for such operation on a reciprocal basis by United States amateur radio operators.

[47 FR 29677, July 8, 1982]

§ 97.305 Application for permit.

(a) Application for a permit shall be made on FCC Form 610-A. Form 610-A may be obtained from the Commission's Washington, D.C., office, from any of the Commission's field offices and, in some instances, from United States missions abroad.

(b) The application form shall be completed in full in English and signed by the applicant. A photocopy of the applicant's amateur operator and station license issued by his government shall be filed with the application. The Commission may require the applicant to furnish additional information. The application must be filed by mail or in person with the Federal Communications Commission, Gettysburg, Pa. 17325, U.S.A. To allow sufficient time for processing, the application should be filed at least 60 days before the date on which the applicant desires to commence operation.

[30 FR 2706, Mar. 3, 1965, as amended at 43 FR 21886, May 22, 1978]

§ 97.307 Issuance of permit.

(a) The Commission may issue a permit to an alien amateur under such terms and conditions as it deems appropriate. If a change in the terms of a permit is desired, an application for modification of the permit is required. If operation beyond the expiration date of a permit is desired, an application for renewal of the permit is required. In any case in which the permittee has, in accordance with the provisions of this subpart, made a timely and sufficient application for renewal of an unexpired permit, such permit shall not expire until the application has been finally determined. Application for modification or for renewal of a permit shall be filed on FCC Form 610-A.

(b) The Commission, in its discretion, may deny any application for a permit under this subpart. If an application is denied, the applicant will be notified by letter. The applicant may, within 90 days of the mailing of such letter, request the Commission to reconsider its action.

(c) Normally, a permit will be issued to expire 1 year after issuance but in no event after the expiration of the license issued to the alien amateur by his government.

[30 FR 2076, Mar. 3, 1965, as amended at 37 FR 23840, Nov. 9, 1972]

§ 97.309 Modification, suspension, or cancellation of permit.

At any time the Commission may, in its discretion, modify, suspend, or cancel any permit issued under this subpart. In this event, the permittee will be notified of the Commission's action by letter mailed to his mailing address in the United States and the permittee shall comply immediately. A permittee may, within 90 days of the mailing of such letter, request the Commission to reconsider its action. The filing of a request for reconsideration shall not stay the effectiveness of that action, but the Commission may stay its action on its own motion.

[30 FR 2706, Mar. 3, 1965]

§ 97.311 Operating conditions.

(a) The alien amateur may not under any circumstances begin operation until he has received a permit issued by the Commission.

(b) Operation of an amateur station by an alien amateur under a permit issued by the Commission must comply with all of the following:

(1) The terms of the bilateral agreement between the alien amateur's government and the government of the United States;

(2) The provisions of this subpart and of Subparts A through E of this part;

(3) The operating terms and conditions of the license issued to the alien amateur by his government; and

(4) Any further conditions specified on the permit issued by the Commission.

[30 FR 2706, Mar. 3, 1965, as amended at 41 FR 47451, Oct. 29, 1976]

§ 97.313 Station identification.

(a) The alien amateur shall identify his station as follows:

(1) Radiotelegraph operation: The amateur shall transmit the call sign issued to him by the licensing country followed by a slant (/) sign and the United States amateur call sign prefix letter(s) and number appropriate to the location of his station.

(2) Radiotelephone operation: The amateur shall transmit the call sign issued to him by the licensing country

followed by the words "fixed", "portable" or "mobile", as appropriate, and the United States amateur call sign prefix letter(s) and number appropriate to the location of his station. The identification shall be made in the English language.

(b) At least once during each contact with another amateur station the alien amateur shall indicate, in English, the geographical location of his station as nearly as possible by city and state, commonwealth or possession.

[30 FR 2706, Mar. 3, 1965, as amended at 47 FR 29677, July 8, 1982]

Subpart H—Amateur-Satellite Service

SOURCE: 45 FR 51567, Aug. 4, 1980, unless otherwise noted.

GENERAL

§ 97.401 Purposes.

The Amateur-Satellite Service is a radiocommunication service using stations on earth satellites for the same purposes as those of the Amateur Radio Service.

§ 97.403 Definitions.

(a) *Space operation.* Space-to-earth, and space-to-space, amateur radio communication from a station which is beyond, is intended to go beyond, or has been beyond the major portion of the earth's atmosphere.

(b) *Earth operation.* Earth-to-space-to-earth amateur radiocommunication by means of radio signals automatically retransmitted by stations in space operation.

(c) *Telecommand operation.* Earth-to-space amateur radio communication to initiate, modify, or terminate functions of a station in space operation.

(d) *Telemetry.* Space-to-earth transmissions, by a station in space operation, of results of measurements made in the station, including those relating to the function of the station.

§ 97.405 Applicability of rules.

The rules contained in this subpart apply to radio stations in the Amateur-Satellite Service. All cases not specifically covered by the provisions

of this Subpart shall be governed by the provisions of the rules governing amateur radio stations and operators (Subparts A through E of this part).

[47 FR 29677, July 8, 1982]

§ 97.407 Eligibility for space operation.

Amateur radio stations licensed to Amateur Extra Class operators are eligible for space operation (see § 97.403(a)). The station licensee may permit any amateur radio operator to be the control operator, subject to the privileges of the control operator's class of license (see § 97.7).

§ 97.409 Eligibility for earth operation.

Any amateur radio station is eligible for earth operation (see § 97.403(b)), subject to the privileges of the control operator's class of license (see § 97.7).

§ 97.411 Eligibility for telecommand operation.

Any amateur radio station designated by the licensee of a station in space operation is eligible to conduct telecommand operation with the station in space operation, subject to the privileges of the control operator's class of license (see § 97.7).

§ 97.413 Space operations requirements.

An amateur radio station may be in space operation where:

(a) The station has not been ordered by the Commission to cease radio transmissions.

(b) The station is capable of effecting a cessation of radio transmissions by commands transmitted by station(s) in telecommand operation whenever such cessation is ordered by the Commission.

(c) There are, in place, sufficient amateur radio stations licensed by the Commission capable of telecommand operation to effect cessation of space operation, whenever such is ordered by the Commission.

(d) The notifications required by § 97.423 are on file with the Commission.

TECHNICAL REQUIREMENTS

§ 97.415 Frequencies available.

The following frequency bands are available for space operation, earth operation and telecommand operation:

FREQUENCY BANDS ¹

kHz	MHz	GHz
7000-7100	144-146	24.00-24.05
14000-14250	435-438	
21000-21450		
24890-24990		
28000-29700		

¹ Unless otherwise specified in this subpart the rules regarding authorized emission modes (§§ 97.61 and 97.65) and authorized transmitting power (§ 97.67) are applicable for each of the listed frequency bands.

² Stations operating in the Amateur-Satellite Service shall not cause harmful interference to other stations between 435 and 438 MHz. (See International Telecommunication Union Radio Regulations, RR 664 (Geneva, 1979).)

[50 FR 18664, May 2, 1985, as amended at 50 FR 33940, Aug. 22, 1985]

SPECIAL PROVISIONS

§ 97.417 Space operation.

(a) Stations in space operation are exempt from the station identification requirements of § 97.84 on each frequency band when in use.

(b) Stations in space operation may automatically retransmit the radio signals of other stations in earth operation, and space operation.

(c) Stations in space operation are exempt from the control operator requirements of § 97.79 and from the provisions of § 97.88 pertaining to the operation of a station by remote control.

[45 FR 51567, Aug. 4, 1980, as amended at 48 FR 26608, June 9, 1983; 48 FR 29875, June 29, 1983]

§ 97.419 Telemetry.

(a) Telemetry transmission by stations in space operation may consist of specially coded messages intended to facilitate communications.

(b) Telemetry transmissions by stations in space operation are permissible one-way communications.

§ 97.421 Telecommand operation.

(a) Stations in telecommand operation may transmit special codes intended to obscure the meaning of com-

mand messages to the station in space operation.

(b) Stations in telecommand operation are exempt from the station identification requirements of § 97.84.

(c) Stations in telecommand operation may transmit from within the military areas designated in § 97.61(b)(7) in the frequency band 435-438 MHz with a maximum of 611 watts effective radiated power (1,000 watts equivalent isotropically radiated power). The transmitting antenna elevation angle between the lower half-power (-3 decibels relative to the peak or antenna bore sight) point and the horizon must always be greater than 10°.

[45 FR 51567, Aug. 4, 1980, as amended at 46 FR 15147, Mar. 4, 1981; 47 FR 29677, July 8, 1982]

§ 97.422 Earth operation.

Stations in earth operation may transmit from within the military areas designated in § 97.61(b)(7) in the frequency band 435-438 MHz with a maximum of 611 watts effective radiated power (1,000 watts equivalent isotropically radiated power). The transmitting antenna elevation angle between the lower half-power (-3 decibels relative to the peak or antenna bore sight) point and the horizon must always be greater than 10°.

[46 FR 15147, Mar. 4, 1981]

§ 97.423 Notification required.

(a) The licensee of every station in space operation shall give written notifications to the Private Radio Bureau, Federal Communications Commission, Washington, DC 20554.

(b) *Pre-space operation notification.*

(1) Three notifications are required prior to initiating space operation. They are:

First notification. Required no less than twenty-seven months prior to initiating space operation.

Second notification. Required no less than fifteen months prior to initiating space operation.

Third notification. Required no less than three months prior to initiating space operation.

(2) The pre-space operation notification shall consist of:

Space operation date. A statement of the expected date space operations will be initiated, and a prediction of the duration of the operation.

Identity of satellite. The name by which the satellite will be known.

Service area. A description of the geographic area on the Earth's surface which is capable of being served by the station in space operation. Specify for both the transmitting and receiving antennas of this station.

Orbital Parameters. A description of the anticipated orbital parameters as follows:

Nongeostationary satellite	Geostationary satellite
(1) Angle of inclination	(1) Nominal geographical longitude.
(2) Period	(2) Longitudinal tolerance.
(3) Apogee (kilometers)	(3) Inclination tolerance.
(4) Perigee (kilometers)	(4) Geographical longitudes marking the extremities of the orbital arc over which the satellite is visible at a minimum angle of elevation of 10° at points within the associated service area.
(5) Number of satellites having the same orbital characteristics	(5) Geographical longitudes marking the extremities of the orbital arc within which the satellite must be located to provide communications to the specified service area.
	(6) Reason when the orbital arc of (5) is less than that of (4).

Technical Parameters. A description of the proposed technical parameters for:

- (1) The station in space operation; and
- (2) A station in earth operation suitable for use with the station in space operation; and
- (3) A station in telecommand operation suitable for use with the station in space operation.

The description shall include:

- (1) Carrier frequencies if known; otherwise give frequency range where carrier frequencies will be located.
- (2) Necessary bandwidth.
- (3) Class of emission.
- (4) Total Peak Power.
- (5) Maximum power density (watts/Hz).
- (6) Antenna radiation pattern.¹
- (7) Antenna gain (main beam).¹
- (8) Antenna pointing accuracy (geostationary satellites only).¹

¹These antenna characteristics shall be provided for both transmitting and receiving antennas.

(9) Receiving system noise temperature.²

(10) Lowest equivalent satellite link noise temperature.³

(c) **In-space operation notification.** Notification is required after space operation has been initiated. The notification shall update the information contained in the pre-space operation notification. In-space operation notification is required no later than seven days following initiation of space operation.

(d) **Post-space operation notification.** Notification of termination of space operation is required no later than three months after termination is complete. If the termination is ordered by the Commission, notification is required no later than twenty-four hours after termination is complete.

Subpart I—Volunteer-Examiner Coordinators

AUTHORITY: Secs. 4(i) and 303, Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303, unless otherwise noted.

SOURCE: 48 FR 45660, Oct. 6, 1983, unless otherwise noted.

GENERAL

§ 97.501 Purpose.

The rules in this subpart are designed to provide for the establishment of volunteer-examiner coordinators to coordinate the efforts of volun-

¹For a station in space operation.

²The total noise temperature at the input of a typical amateur radio station receiver shall include the antenna noise (generated by external sources (ground, sky, etc.) peripheral to the receiving antenna and noise re-radiated by the satellite), plus noise generated internally to the receiver. The additional receiver noise is above thermal noise, kT_0B .

Referred to the antenna input terminals, the total system noise temperature is given by

$$T_s = T_a + (L-1) T_0 + L T_r$$

where: T_a : antenna noise temperature

L : line losses between antenna output terminals and receiver input terminals

T_0 : ambient temperature, usually given as 290° K

T_r : receiver noise temperature, this is also given as $(NF-1)T_0$, where NF is receiver noise figure.

teer examiners in preparing and administering examinations for amateur radio operator licenses.

§ 97.503 Definitions.

For the purpose of this subpart, the following definitions are applicable:

(a) *Volunteer-examiner coordinator (VEC)*. An organization which has entered into an agreement with the Federal Communications Commission to coordinate the efforts of volunteer examiners in preparing and administering examinations for amateur radio operator license.

(b) *Volunteer examiner*. An amateur radio operator who prepares or administers examinations to applicants for amateur radio operator licenses.

(Secs. 4(i) and 303, Communications Act of 1934, as amended (47 U.S.C. 154(i) and 303), and in § 1.429 of the Commission's Rules (47 CFR 1.429))

[48 FR 45660, Oct. 6, 1983, as amended at 49 FR 1376, Jan. 11, 1984; 49 FR 30313, July 30, 1984]

§ 97.505 Applicability of rules.

These rules apply to each organization that serves as a volunteer-examiner coordinator.

(Secs. 4(i) and 303, Communications Act of 1934, as amended (47 U.S.C. 154(i) and 303), and in § 1.429 of the Commission's Rules (47 CFR 1.429))

[49 FR 30313, July 30, 1984]

§ 97.507 VEC Qualifications.

In order to be a VEC, an organization must:

(a) Be organized at least partially for the purpose of furthering amateur radio;

(b) Be at least regional in scope, serving one or more of the following regions:

(1) Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont;

(2) New Jersey and New York;

(3) Delaware, the District of Columbia, Maryland and Pennsylvania;

(4) Alabama, Florida, Georgia, Kentucky, North Carolina, South Carolina, Tennessee and Virginia;

(5) Arkansas, Louisiana, Mississippi, New Mexico, Oklahoma and Texas;

(6) California;

(7) Arizona, Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming;

(8) Michigan, Ohio and West Virginia;

(9) Illinois, Indiana and Wisconsin;

(10) Colorado, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota;

(11) Alaska;

(12) Caribbean Insular areas: Commonwealth of Puerto Rico, United States Virgin Islands (50 islets and cays) and Navassa Island; and

(13) Pacific Insular areas: Hawaii, American Samoa (seven islands), Baker Island, Commonwealth of Northern Mariana Islands, Guam Island, Howland Island, Jarvis Island, Johnston Island (Islets East, Johnston, North and Sand), Kingman Reef, Midway Island (Islets Eastern and Sand), Palmyra Island (more than 50 islets) and Wake Island (Islets Peale, Wake and Wilkes).

(c) Be capable of acting as a VEC in one or more of the regions listed in paragraph (b) of this section;

(d) Agree to coordinate all amateur radio operator examination elements for all amateur radio operator license classes except Novice Class;

(e) Agree not to accept any compensation from any source for its services as a VEC, except reimbursement for out-of-pocket expenses permitted by § 97.36; and

(f) Agree to assure that for any examination every candidate qualified under these rules is registered without regard to race, sex, religion, national origin or membership (or lack thereof) in any amateur radio organization.

[48 FR 45660, Oct. 6, 1983, as amended at 48 FR 49244, Oct. 25, 1983; 49 FR 30474, July 31, 1984]

§ 97.509 Conflicts of interest.

An organization engaged in the manufacture or distribution of equipment used in connection with amateur radio transmissions, or in the preparation or distribution of any publication used in preparation for obtaining amateur radio station operator licenses may be a VEC only upon a persuasive showing to the Commission that preventative

measures have been taken to preclude any possible conflict of interest.

(Secs. 4(i) and 303, Communications Act of 1934, as amended (47 U.S.C. 154(i) and 303), and in § 1.429 of the Commission's Rules (47 CFR 1.429))

[49 FR 30313, July 30, 1984]

VOLUNTEER-EXAMINER COORDINATOR FUNCTIONS

§ 97.511 Agreement required.

No organization may serve as a VEC until that organization has entered into a written agreement with the Federal Communications Commission to do so. The VEC must abide by the terms of the agreement.

(Secs. 4(i) and 303, Communications Act of 1934, as amended (47 U.S.C. 154(i) and 303), and in § 1.429 of the Commission's Rules (47 CFR 1.429))

[49 FR 30313, July 30, 1984]

§ 97.513 Scheduling of examinations.

A VEC will coordinate the dates and times for scheduling examinations (see § 97.26) throughout each of the regions it serves. A VEC may also coordinate the scheduling of testing opportunities at any locations outside of the thirteen regions set forth in § 97.507(b).

[50 FR 4977, Feb. 5, 1985]

§ 97.515 Coordinating volunteer examiners.

A VEC will accredit amateur radio operators licensed by the Federal Communications Commission as volunteer examiners (see § 97.30). A VEC will seek to recruit a broad representation of amateur radio operators to be volunteer examiners. A VEC may not discriminate in accrediting volunteer examiners on the basis of race, sex, religion or national origin. A VEC may not refuse to accredit volunteer examiners on the basis of membership (or lack thereof) in an amateur radio organization. A VEC may not discriminate in accrediting volunteer examiners based upon their accepting or declining to accept reimbursement. A VEC must not accredit an amateur radio operator volunteering to be an examiner if:

(a) The volunteer examiner does not meet minimum statutory qualifications or minimum qualifications as prescribed by the rules;

(b) The FCC refuses to accept the voluntary and uncompensated services of the volunteer examiner;

(c) The VEC determines that the volunteer is not competent to perform the function for which he/she volunteered; or

(d) The VEC determines that questions of the volunteer's integrity or honesty could compromise the examination(s).

[48 FR 45660, Oct. 6, 1983, as amended at 49 FR 30474, July 31, 1984]

§ 97.517 Examinations.

A VEC will design (see § 97.27(d)), assemble, print and distribute written examination Elements 3, 4(A) and 4(B). A VEC may design, assemble, print and distribute examination Elements 1(B) and 1(C). A VEC is required to hold examination designs in confidence.

(Secs. 4(i) and 303, Communications Act of 1934, as amended (47 U.S.C. 154(i) and 303), and in § 1.429 of the Commission's Rules (47 CFR 1.429))

[49 FR 30313, July 30, 1984]

§ 97.519 Examination procedures.

At the completion of each examination, a VEC will collect the candidates' application forms, answer sheets and test results from the volunteer examiners (see § 97.28(h)). A VEC will:

(a) Make a record of the date and place of the test; the names of the volunteer examiners and their qualifications; the names of the candidates; the test results; and, related information.

(b) Screen the application for completeness and authenticity.

(c) Forward the application within ten days of its receipt from the examiners to: Federal Communications Commission, Licensing Division, Private Radio Bureau, Gettysburg, Pennsylvania 17325.

(d) Make available to any authorized FCC representative any requested examination records.

[48 FR 45660, Oct. 6, 1983, as amended at 49 FR 1376, Jan. 11, 1984]

§ 97.521 Evaluation of questions.

A VEC will be expected to evaluate the clarity and accuracy of examination questions on the basis of experience, and to bring ambiguous or inaccurate questions to the attention of the Commission, with a recommendation on whether to revise the question or to delete the question from the Commission's list of examination questions.

§ 97.523 [Reserved]

APPENDIX 1—[RESERVED]

APPENDIX 2—EXTRACTS FROM THE INTERNATIONAL TELECOMMUNICATIONS CONVENTION (MALAGA-TORREMOLINOS, 1973), AS REVISED BY THE WORLD ADMINISTRATIVE RADIO CONFERENCE, GENEVA, 1979

ARTICLE 1

Terms and Definitions

Section III. Radio Services

Section 3.34 *Amateur Service:*

A radiocommunications service for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, by duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest.

Sec. 3.35 *Amateur-Satellite Service:*

A radiocommunications service using space stations on earth satellites for the same purposes as those of the amateur service.

ARTICLE 32

Amateur Service and Amateur-Satellite Service

Section I. Amateur Service

Sec. 1. Radiocommunications between amateur stations of different countries shall be forbidden if the administration of one of the countries concerned has notified that it objects to such radiocommunications.

Sec. 2. (1) When transmissions between amateur stations of different countries are permitted, they shall be made in plain language and shall be limited to messages of a technical nature relating to tests and to remarks of a personal character for which, by reason of their unimportance, recourse to the public telecommunications service is not justified.

(2) It is absolutely forbidden for amateur stations to be used for transmitting international communications on behalf of third parties.

(3) The preceding provisions may be modified by special arrangements between the administrations of the countries concerned.

Sec. 3. (1) Any person seeking a license to operate the apparatus of an amateur station shall prove that he is able to send correctly by hand and to receive correctly by ear texts in Morse code signals. The administrations concerned may, however, waive this requirement in the case of stations making use exclusively of frequencies above 30 MHz.

(2) Administrations shall take such measures as they judge necessary to verify the operational and technical qualifications of any person wishing to operate the apparatus of an amateur station.

Sec. 4. The maximum power of amateur stations shall be fixed by the administrations concerned, having regard to the technical qualifications of the operators and to the conditions under which these stations are to operate.

Sec. 5. (1) All the general rules of the Convention and of these Regulations shall apply to amateur stations. In particular, the emitted frequency shall be as stable and as free from spurious emissions as the state of technical development for such stations permits.

(2) During the course of their transmissions, amateur stations shall transmit their call sign at short intervals.

Section II. Amateur-Satellite Service

Sec. 6. The provisions of Section I of this Article shall apply equally, as appropriate, to the Amateur-Satellite Service.

Sec. 7. Space stations in the Amateur-Satellite Service operating in bands shared with other services shall be fitted with appropriate devices for controlling emissions in the event that harmful interference is reported in accordance with the procedure laid down in Article 22. Administrations authorizing such space stations shall inform the IFRB and shall ensure that sufficient earth command stations are established before launch to guarantee that any harmful interference which might be reported can be terminated by the authorizing administration.

RESOLUTION NO. 641

Relating to the Use of Frequency Band 7000-7100 kHz.

The World Administrative Radio Conference, Geneva, 1979.

Considering

(a) That the sharing of frequency bands by amateur and broadcasting services is undesirable and should be avoided;

(b) That it is desirable to have worldwide exclusive allocations for these services in Band 7;

(c) That the band 7000-7100 kHz is allocated on a worldwide basis exclusively to the amateur service;

Resolves

That the broadcasting service shall be prohibited from the band 7000-7100 kHz and that the broadcasting stations operating on frequencies in this band shall cease such operation.

[49 FR 32851, Aug. 17, 1984, as amended at 49 FR 48551, Dec. 13, 1984]

APPENDIX 3—CLASSIFICATION OF EMISSIONS

For convenient reference, the tabulation below is extracted from the classification of typical emissions in Part 2 of the Commission's Rules and Regulations. It includes only those general classifications which appear most applicable to the Amateur Radio Service.

Type of modulation	Type of transmission	Symbol
Amplitude	With no modulation	N0N.
	Telegraphy without the use of a modulating audio frequency (by on-off keying).	A1A.
	Telegraphy by the on-off keying of an amplitude modulating audio frequency or audio frequencies or by the on-off keying of the modulated emission (special case: an unkeyed emission amplitude modulated).	A2A, A2B.
	Telephony	
	Double Sideband	A3E.
	Single Sideband	
	Suppressed Carrier	J3E.
	Reduced Carrier	R3E.
	Full Carrier	H3E.
	Facsimile	A3C.
Frequency (or phase).	Television	A3F.
	Telegraphy by frequency shift keying without the use of a modulating audio frequency.	F1B (G1B).
	Telegraphy by the on-off keying of a frequency modulating audio frequency or by the on-off keying of frequency modulated emission (special case: an unkeyed emission frequency modulated).	F2B (G2B).
	Telephony	
	Facsimile	F3E (G3E).
		F3C (G3C).

Type of modulation	Type of transmission	Symbol
Pulse	Television	F3F (G3F).
		P0N. ¹

¹ The letters "K, L, M, Q, V, W and X" may also be used in place of the letter "P" for pulse radar.

[49 FR 48713, Dec. 14, 1984]

APPENDIX 4—CONVENTION BETWEEN CANADA AND THE UNITED STATES OF AMERICA RELATING TO THE OPERATION BY CITIZENS OF EITHER COUNTRY OF CERTAIN RADIO EQUIPMENT OR STATIONS IN THE OTHER COUNTRY (EFFECTIVE MAY 15, 1952)

ARTICLE III

It is agreed that persons holding appropriate amateur licenses issued by either country may operate their amateur stations in the territory of the other country under the following conditions:

(a) Each visiting amateur may be required to register and receive a permit before operating any amateur station licensed by his government.

(b) The visiting amateur will identify his station by:

(1) *Radiotelegraph operation.* The amateur call sign issued to him by the licensing country followed by a slant (/) sign and the amateur call sign prefix and call area number of the country he is visiting.

(2) *Radiotelephone operation.* The amateur call sign in English issued to him by the licensing country followed by the words, "fixed," "portable" or "mobile", as appropriate, and the amateur call sign prefix and call area number of the country he is visiting.

(c) Each amateur station shall indicate at least once during each contact with another station its geographical location as nearly as possible by city and state or city and province.

(d) In other respects the amateur station shall be operated in accordance with the laws and regulations of the country in which the station is temporarily located.

[28 FR 14199, Dec. 21, 1963, as amended at 48 FR 29875, June 29, 1983]

APPENDIX 5—DETERMINATION OF ANTENNA HEIGHT ABOVE AVERAGE TERRAIN

The effective height of the transmitting antenna shall be the height of the antenna's center of radiation above "average terrain." For this purpose "effective height" shall be established as follows:

(a) On a U.S. Geological Survey Map, having a scale of 1:250,000, lay out eight evenly spaced radials, extending from the transmitter site to a distance of 10 miles and beginning at (0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°T.). If preferred, maps of greater scale may be used.

(b) By reference to the map contour lines, establish the ground elevation above mean sea level (AMSL) at 2, 4, 6, 8, and 10 miles from the antenna structure along each radial. If no elevation figure or contour line exists for any particular point, the nearest contour line elevation shall be employed.

(c) Calculate the arithmetic average of these 40 points of elevation (5 points of each of 8 radials).

(d) The height above average terrain of the antenna is thus the height AMSL of the antenna's center of radiation, minus the height of average terrain as calculated above.

NOTE 1: Where the transmitter is located near a large body of water, certain points of established elevation may fall over water. Where it is expected that service would be provided to land areas beyond the body of water, the points at water level in that direction should be included in the calculation of average elevation. Where it is expected that service would not be provided to land areas beyond the body of water, the points at water level should not be included in the average.

NOTE 2: In instances in which this procedure might provide unreasonable figures due to the unusual nature of the local terrain, applicant may provide additional data at his own discretion, and such data may be considered if deemed significant.

[37 FR 18547, Sept. 13, 1972, as amended at 47 FR 29677, July 8, 1982; 48 FR 29875, June 29, 1983]

APPENDIX 6—EXTRACTS FROM THE INTERNATIONAL TELECOMMUNICATIONS CONVENTION (MALAGA-TORREMOLINOS, 1973), AS REVISED BY THE WORLD ADMINISTRATIVE RADIO CONFERENCE, GENEVA, 1979

RESOLUTION NO. 640

Relating to the International Use of Radiocommunications, in the Event of Natural Disasters, in Frequency Bands Allocated to the Amateur Service.

Considering

(a) That in the event of natural disaster normal communication systems are frequently overloaded, damaged, or completely disrupted.

(b) That rapid establishment of communications is essential to facilitate worldwide relief actions.

(c) That the amateur bands are not bound by international plans or notification procedures, and are therefore well adapted for short-term use in emergency cases.

(d) That international disaster communications would be facilitated by temporary use of certain frequency bands allocated to the amateur service.

(e) That under those circumstances the stations of the amateur service because of their widespread distribution and their demonstrated capacity in such cases, can assist in meeting essential communication needs.

(f) That existence of national and regional amateur emergency networks using frequencies throughout the bands allocated to the amateur service.

(g) That in the event of a natural disaster, direct communications between amateur stations and other stations might enable vital communications to be carried out until normal communications are restored.

Recognizing

That the rights and responsibilities for communications in the event of a natural disaster rest with the administrations involved.

Resolves

1. That the bands allocated to the amateur service which are specified in No. 510 may be used by administrations to meet the needs of international disaster communications.

2. That such use of these bands shall be only for communications in relation to relief operations in connection with natural disasters.

3. That the use of specified bands allocated to the amateur service by non-amateur stations for disaster communications shall be limited to the duration of the emergency and to the specific geographical areas as defined by the responsible authority of the affected country.

4. That disaster communications shall take place within the disaster area and between the disaster area and the permanent headquarters of the organization providing relief.

5. That such communications shall be carried out only with the consent of the administration of the country in which the disaster has occurred.

6. That relief communications provided from outside the country in which the disaster has occurred shall not replace existing national or international amateur emergency networks.

7. That close cooperation is desirable between amateur stations and the stations of other radio services which may find it necessary to use amateur frequencies in disaster communications.

8. That such international relief communications shall avoid, as far as practicable, interference to the amateur service networks.

Invites Administrations

1. To provide for the needs of international disaster communications.

2. To provide for the needs of emergency communications within their national regulations.

[49 FR 32851, Aug. 17, 1984]

APPENDIX 7—EXTRACTS FROM THE INTERNATIONAL TELECOMMUNICATIONS CONVENTION (MALAGA-TORREMOLINOS, 1973), AS REVISED BY THE WORLD ADMINISTRATIVE RADIO CONFERENCE, GENEVA, 1979

RESOLUTION NO. 641

Relating to the Use of the Frequency Band 7 000-7 100 kHz

Considering

(a) That the sharing of frequency bands by amateur and broadcasting services is undesirable and should be avoided.

(b) That it is desirable to have worldwide exclusive allocations for these services in Band 7.

(c) That the band 7 000-7 100 kHz is allocated on a worldwide basis exclusively to the amateur service.

Resolves

That the broadcasting service shall be prohibited from the band 7 000-7 100 kHz and that the broadcasting stations operating on frequencies in this band shall cease such operation.

[49 FR 32851, Aug. 17, 1984]

APPENDIX 8—EXTRACTS FROM THE INTERNATIONAL TELECOMMUNICATIONS CONVENTION (MALAGA-TORREMOLINOS, 1973), AS REVISED BY THE WORLD ADMINISTRATIVE RADIO CONFERENCE, GENEVA, 1979

RESOLUTION NO. 642

Relating to the Bringing into Use of Earth Stations in the Amateur-Satellite Service.

Recognizing

That the procedures of Articles 11 and 13 are applicable to the Amateur-Satellite Service.

Recognizing Further

(a) That the characteristics of each station in the Amateur-Satellite Service vary widely.

(b) That space stations in the Amateur-Satellite Service are intended for multiple access by amateur earth stations in all countries.

(c) That coordination among stations in the amateur and Amateur-Satellite Services is accomplished without the need for formal procedures.

(d) That the burden of terminating any harmful interference is placed upon the administration authorizing a space station in the Amateur-Satellite Service pursuant to the provisions of No. 2741 of the Radio Regulations.

Notes

That certain information specified in Appendices 3 and 4 cannot reasonably be provided for earth stations in the Amateur-Satellite Service.

Resolves

1. That when an administration (or one acting on behalf of a group of named administrations) intends to establish a satellite system in the Amateur-Satellite Service and wishes to publish information with respect to earth stations in the system it may:

1.1 Communicate to the IFRB all or part of the information listed in Appendix 3; the IFRB shall publish such information in a special section of its weekly circular requesting comments to be communicated within a period of four months after the date of publication.

1.2 Notify under Nos. 1488 to 1491 all or part of the information listed in Appendix 3; the IFRB shall record it in a special list.

2. That this information shall include at least the characteristics of a typical amateur earth station in the Amateur-Satellite Service having the facility to transmit signals to the space station to initiate, modify, or terminate the functions of the space station.

[49 FR 32851, Aug. 17, 1984]

PART 99—DISASTER COMMUNICATIONS SERVICE

Subpart A—General

Sec.

99.1 Basis and purpose.

99.3 Definitions.

Subpart B—Station License or Authorization

99.7 Eligibility.

99.9 Organization of networks.